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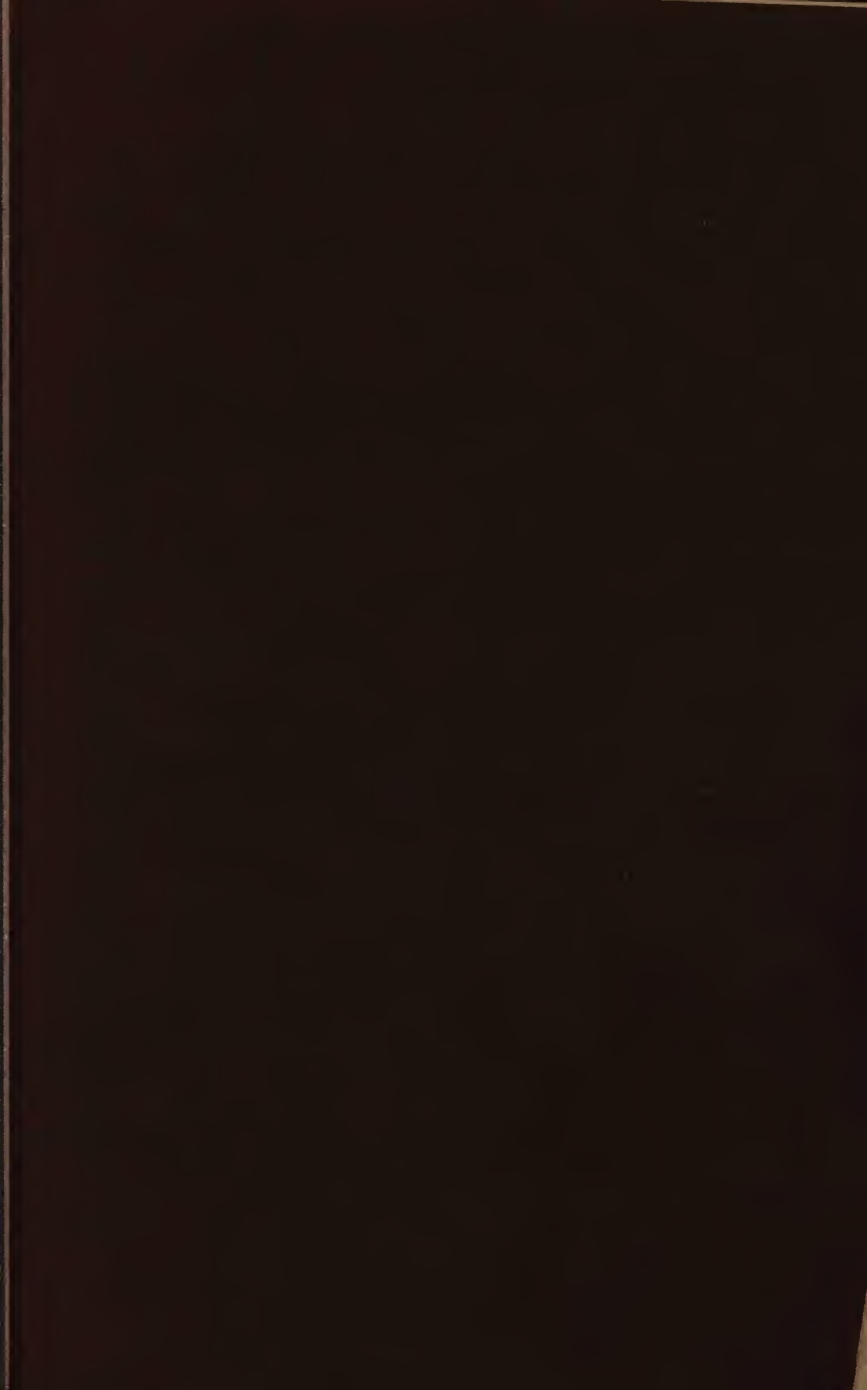
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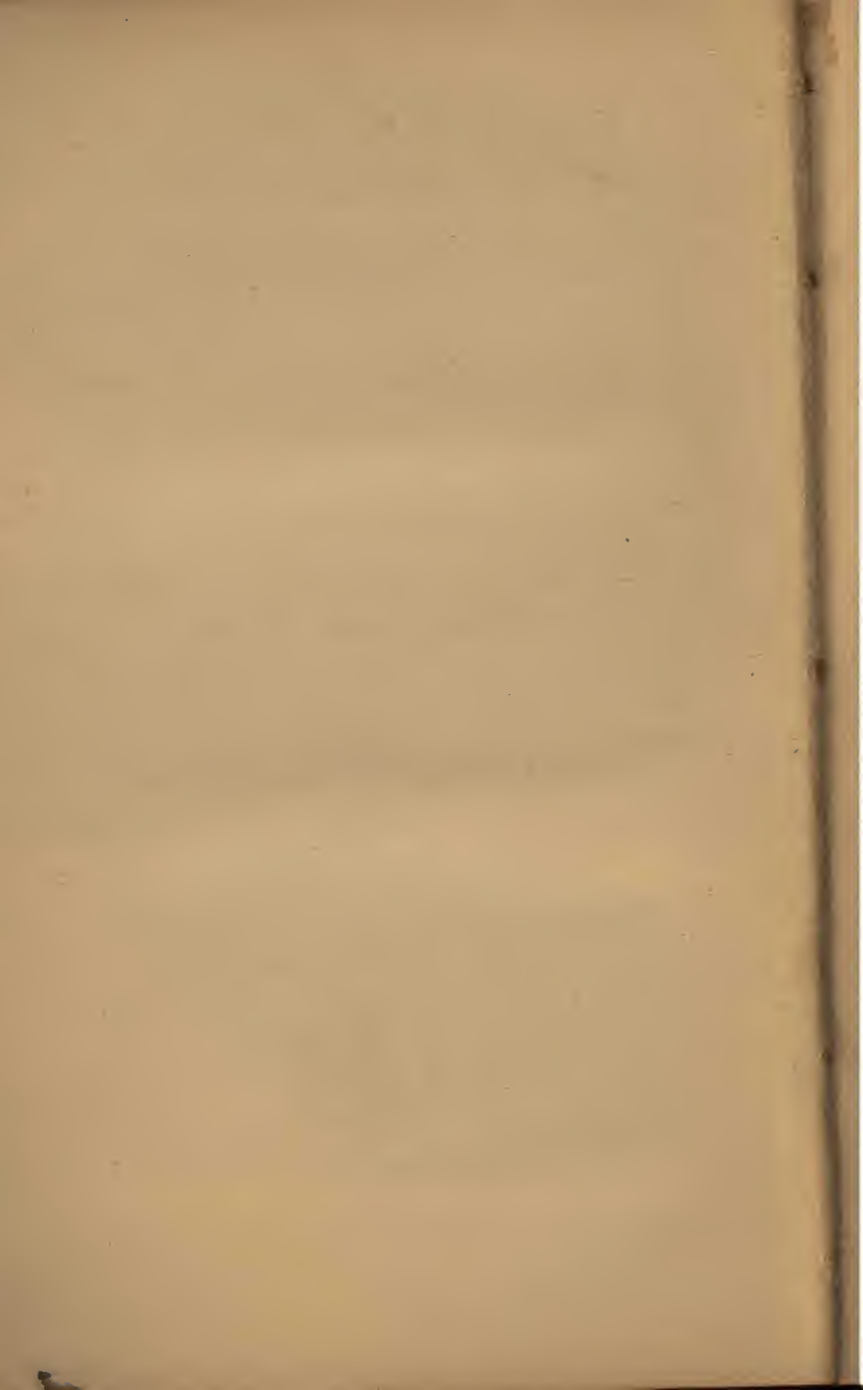
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HOUSE - PLANS

FOR

EVERYBODY.

FOR VILLAGE AND COUNTRY RESIDENCES,
COSTING FROM \$250 TO \$8,000;

INCLUDING

FULL DESCRIPTIONS AND ESTIMATES IN DETAIL OF
MATERIALS, LABOR, AND COST,

WITH

MANY PRACTICAL SUGGESTIONS,
AND 175 ILLUSTRATIONS.

FIFTH EDITION

BY

S. B. REED, ARCHITECT.



NEW YORK:
ORANGE JUDD COMPANY,
751 BROADWAY.

1882.

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P R E F A C E .

The flattering commendations received from nearly every part of the United States, and Canada, in reference to the House-plans published in the *American Agriculturist* during the past three years, show that they meet a great want, and in response to a general demand, they are here presented in a convenient, connected form. The opportunity has been improved to make revisions, especially in most of the estimates, which were found necessary, owing to depreciation in the cost of building since their first issue. The author has been guided in this work by many years' experience, in planning and superintending the erection of country buildings, and has selected, from an extensive aggregation of original designs in his possession, such examples as seemed best to serve for purposes of simplicity, comfort, and economy. All the matters here presented are purely practical—well calculated to assist such as are contemplating the erection of either a village or country house. The plans embrace almost every variety of arrangement and style—each one is accompanied with a detailed description of its conveniences and construction—and its cost is shown by careful estimates, made to correspond with a uniform standard of prices, at present rates. To builders, this work will be valuable as a hand-book of reference, to aid them when applied to for suggestions, either in the projection of new dwellings, or in the alteration of old ones, saving much time, study, and calculations.

S. B. REED.

Corona, L. I., 1878.

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DESIGN I.



Fig. 1.—EXTERIOR OF COTTAGE.

A COTTAGE, COSTING \$250.

This plan was designed for a simple cottage, with sufficient accommodations for beginners in housekeeping with limited means. It is arranged as the *Wing* of a larger house to be erected in the future, as indicated in the dotted sketch adjoining the ground-plan. (The building, with the proposed enlargements complete, are given

in Design VIII. To a certain extent, one's dwelling is an index of his character. Any effort at building expresses the owner's ability, taste, and purpose. Every industrious man, starting in life, has a right, and should be encouraged, to anticipate prosperity, as the sure reward of honest worth; and he may, with propriety, give emphasis to such anticipations in every step, and with every blow struck. His dwelling may well express the progressive character, rather than a conclusive result. Beginning a home by starting with a room or two, as present means will allow, and increasing its dimensions as can be afforded, without the precarious aid of the money-lender, is honest, independent, and best provides against the ever-changing vicissitudes of life. The first step towards building is the preparation of plans. These should be sufficiently comprehensive to embrace all probable requirements. If only a small beginning is intended, it should be made to exhibit some degree of completeness, and be arranged to conform with the proposed future enlargements without serious alterations....

EXTERIOR, (fig. 1).—In view of the relation this structure is to bear to a proposed main house, and to allow for the grading likely to be required in the ultimate completion of the whole, the foundation is made to show four feet above the ground. Such elevation adds to the prominence and good appearance of the building, and relieves the interior from the dampness likely to result from a closer contact with the soil. The style is simple, neat, and favorable for the using of ordinary materials and methods of construction.... INTERIOR, (fig. 2).—Hight of ceiling, 9 feet. The entire floor space is utilized in the three convenient divisions—a Living-room, Bedroom, and a Large Pantry—with no chimney-breast, or stairway to interfere. Each room is pleasantly lighted, and the larger one has outside entrances front and rear. With a favorable location, the living-room may be made

a very cheerful apartment.... CONSTRUCTION. — For economy, and in prospect of a future enlargement, that shall include ample cellars, such excavations are omitted for this building. The Foundations are brick piers, extending in the earth below the reach of frost, and 4 feet above, and the intermediate spaces are close-boarded, making an inclosure useful for many purposes. If desired,



Fig. 2.—INTERIOR OF COTTAGE.

a sort of temporary cellar may be made, by deepening the central portion of this inclosure a foot or two, and banking the loose earth against the inside of the boarding. The Framework and other parts are substantially constructed, of materials as indicated in the appended estimate. The Chimney rests on the central partition (which is strengthened by the central pier of the foundation), and has two flues, with metal thimbles in the bottom of each—one to receive the stove-pipe from the living-room, and the other to serve as a ventilator for the bedroom. All

of the materials are intended to be of merchantable quality. The siding, flooring, and casings are mill-dressed. The sizes of the sash are 2 ft. 8 in. $\times$ 5 ft. 2 in., and of the doors, 2 ft. 8 in. $\times$ 6 ft. 8 in., all $1\frac{1}{4}$ in. thick, and may be found ready-made, and seasoned, in the stock of any regular dealer.... In the following *estimate*, the item of \$20, for carpenter's labor, may seem very little. This

amount is allowed for preparing the building ready for the plasterer, and is entered in this manner for convenience in making the calculations. Adding to the above amount the cost of such labor in the "completed" parts, will make a total of \$50.

ESTIMATE, cost of materials and labor:

1,000 bricks, laid, at \$12 per M.....	\$12.00
124 yards plastering, at 20c. per yard.....	24.80
636 feet of timber, at \$15 per M.....	9.54
2 sills, 4×6 in. 18 ft. long.	1 girder, 4×6 in. 18 ft. long.
2 sills, 4×6 in. 16 ft. long.	9 beams, 3×6 in. 16 ft. long.
4 posts, 4×6 in. 10 ft. long.	14 ceiling boards, 2×4 in. 16 ft. long.
75 wall-strips, 2×4×13, at 11c. each.....	8.25
98 siding, 9½ inches, at 25c. each.....	24.50
Cornice materials.....	6.00
50 shingling lath, at 5c. each.....	2.50
6 shingling planks, at 20c. each.....	1.20
12 bunches shingles, at \$1.25 per bunch.....	15.00
36 flooring, 9½ in., at 25c.....	9.00
7 windows, complete, at \$6.....	42.00
4 doors, complete, at \$5.....	20.00
2 stoops and closets, complete.....	20.00
Nails, \$4; painting, \$14; carting, \$5.....	23.00
Carpenter's labor, not included above.....	20.00
Incidentals.....	12.21
Total cost.....	\$250.00

DESIGN II.

COUNTRY COTTAGE, COSTING \$450 TO \$550.

This plan of an inexpensive country dwelling is adapted to the wants of many people whose circumstances will not admit of a larger outlay. It was originally prepared and published in response to many calls for very low-priced country houses, "some as cheap as lumber and nails can make them." The present one approximates that point, and will aid in devising others.... Two ELEVATIONS are given for the same ground-plan; the first (fig. 3) is for a one-story house of the simplest design, with an entrance door, a neat porch, and two windows in front. The rear is arranged similarly. The roof is

conspicuous, in keeping with its importance. No matter how cheaply one proposes to build a house, it is essential not to slight the roof. A roof fit for a one-story cottage would answer equally well on a three-story house,



Fig. 3.—ELEVATION OF ONE-STORY HOUSE.

so that relatively the cost of this part becomes greater, as the other parts become reduced and cheapened GROUND-PLAN, (fig. 4).—The accommodations are quite sufficient for a small family, consisting of three rooms, two lobbies, a kitchen-pantry, and a clothes-press. The Lobbies protect the rooms from direct contact with the outside doors. The Living-room is large, and accessible alike from each entrance ; it has windows front and rear, and is convenient to the pantry ; one entire side is unbroken, giving additional space for furniture, etc. The Pantry is shelved on two sides, and has a sash opening from the rear lobby, receiving light through the head-

light over the rear entrance door. The front Bedroom is of good size—large enough to be used as a sitting-room; it adjoins the rear bedroom, and a clothes-press, and has a window facing the road. The rear Bedroom is the most retired, and has a window looking to the rear. The Press or closet is shelved and hooked in the usual manner. The door between the bedrooms might be dispensed with, but its convenience more than repays its cost.... CONSTRUCTION.—The Foundations are of com-

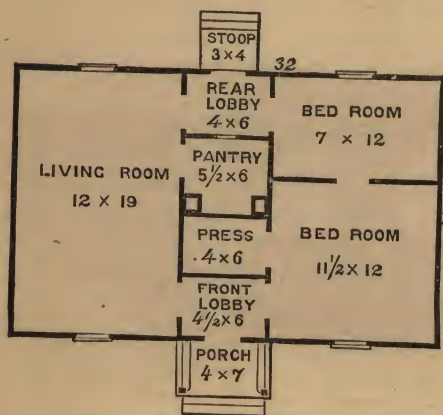


Fig. 4.—GROUND-PLAN OF HOUSE.

mon stone and mortar, laid in trenches, so as not to be affected by frost, and show 1 1/2 feet above ground.

The supports for the central partitions are stone piers, 4 feet apart. The Chimneys are of hard brick and mortar, passing through the first story in two

flues, but joined together beneath the roof, and finished above as a single chimney. All the timber of the exterior frame is of 4 x 6-inch spruce. The sills are laid flatways on the foundation, and the upright frame-work stands upon them. The beams are of 1 1/4 x 8-inch spruce planks; they are notched 4 inches, to fit on the sill, and bear on the foundation, and are nailed to the studding and sills, binding the whole together. The ceiling-strips are of 1 1/4 x 5-inch spruce, resting on the ties, and nailed to the studding. The rafters are 2 x 4-inch wall-strips. All beams, studding, and rafters, are placed 16 inches

apart from centers. The siding is of 10-inch dressed pine. The roof is covered with 18-inch pine shingles, laid on $1\frac{1}{4} \times 2$ -inch shingling-lath. The porch-frame is of dressed and cornered timber, and is roofed with shingles on flooring laid face down. The flooring is $1\frac{1}{8} \times 9$ -inch spruce "milled." The interior is plainly cased: for doors and windows, $3\frac{1}{4}$ inches wide; base, 6 inches;



Fig. 5.—ELEVATION OF STORY-AND-A-HALF HOUSE.

chair-back in the living-room, 3 inches; all beveled. All sashes and doors are $1\frac{1}{4}$ inch thick. The interior side-walls and ceilings are white-sand finished, on brown mortar and seasoned lath. Many efforts have been made to devise something cheaper than plastering for the inside lining of walls, but no substitute has yet been found to equal it in cheapness or durability. Plastering, as

usually prepared and applied, conduces to the healthfulness of any apartment, emits no odor of mouldiness, has no attraction or harbor for vermin, is impervious to air, and a non-conductor of sound. Where linings of thin wood or paper are used, it is necessary to deafen the partitions and ceilings, otherwise they will be noisy. Sound made in any one part will reverberate through the house with drum-like suggestiveness. Most of such materials absorb moisture rapidly from the atmosphere, and when at any distance from the house-fires, so as not to be warmed and dried, the moisture is retained in

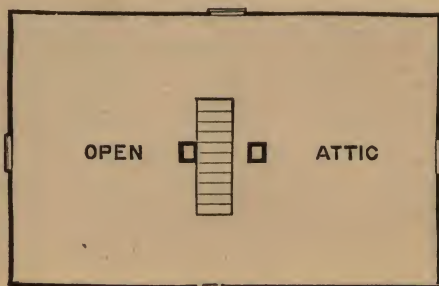


Fig. 6.—SECOND FLOOR.

them. This is especially the case in chambers and closets. Rather than seek a substitute for plastering, it is better to extend its use, and, where practicable, apply it as an outside covering, as well as for inside linings, as described for Design VI. The SECOND ELEVATION, (fig. 5,) shows an enlargement of the first, by increasing the outlines of the roof, giving space for a SECOND FLOOR, (fig. 6). Such space, though not immediately required for bedrooms, would be valuable for many purposes. The appearance of the building is improved by the enlargement, and the extra cost will not exceed one hundred dollars.

Cost of Cottage—No. 1:

468 ft. stone foundation, at 5c. per foot.....	\$23.40
1,000 bricks in chimneys, laid, at \$12 per M.....	12.00
270 yards plastering, at 25c. per yard.....	67.50
576 feet of timber, at \$15 per M.....	8.64
2 sills, 4×6 in. 80 ft. long.	
2 sills, 4×6 in. 32 ft. long.	
2 plates, 4×6 in. 20 ft. long.	
2 plates, 4×6 in. 32 ft. long.	
4 posts, 4×6 in. 10 ft. long.	
2 girts, 4×6 in. 20 ft. long.	
160 wall-strips, at 13c. each.....	20.80
56 rough plank, at 16c. each.....	8.96
70 flooring, at 20c. each, \$14; 115 siding, at 25c., \$28.75.....	42.75
156 shingling-lath, at 6c. each.....	9.36
27 bunches shingles, at \$1.50 each.....	40.50
Cornice and porch materials.....	21.00
4 windows, at \$5 each, \$20; 9 doors, at \$3 each, \$27.....	47.00
Closet finish and nails, \$26.09; cartage, \$12.....	38.09
Carpenter's labor, not included above.....	60.00
Painting.....	50.00
Total.....	\$450.00

Extra cost of cottage—No. 2:

3 windows, at \$5 each, \$15; 70 flooring, at 20c., \$14.....	\$29.00
25 siding, \$6.25; 19 rough plank, \$3.04.....	9.29
23 shingling-lath, \$1.38; 4 bunches shingles, \$6.....	7.38
25 wall-strips, \$3.25; 400 brick, \$4.80.....	8.05
Timber, \$5; stairs, \$20; porch, \$5.....	30.00
Carpenter's labor.....	16.28
Total.....	\$100.00

DESIGN III.

A COUNTRY COTTAGE, COSTING \$550.

These plans are for a low-priced house, similar in character to those in Design II., but differing entirely in outlines and arrangement, and embracing a much larger area of floor space, with increased accommodations....

ELEVATION, (fig. 7.)—The Front is broken with angles, furnishing a greater number of vertical lines, thus giving relief from the depressing appearance that would otherwise be manifest. The roof projections are proportionate, with simple finish. The cornices of the central or main part are the most prominent, and have plain trusses. The gable openings supplying ventilation between the

ceilings and roof.... GROUND-PLAN, (fig. 8).—The interior contains five quite ample rooms, conveniently arranged, besides a lobby, pantry, and two closets. Height of ceilings in two principal rooms, $9\frac{1}{2}$ feet; in the side extensions, 6 feet at the plate, following the rafters to

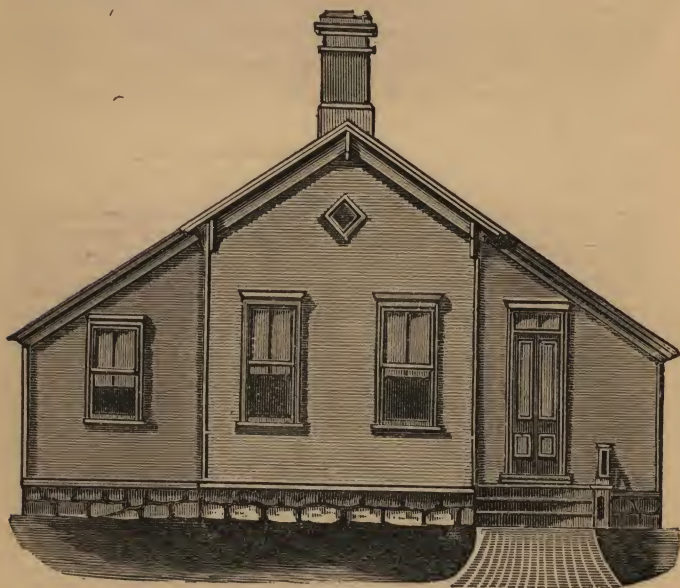


Fig. 7.—ELEVATION OF FRONT OF HOUSE.

the center of the rooms, and from thence are leveled across at the height of 9 feet. The front entrance is through a lobby. (If desired to economize further, the front stoop and one door may be saved, by putting an arch in place of the front door, making a recessed porch of the lobby.) The Parlor has two front windows, and a closet, and adjoins the kitchen and two bedrooms. The Kitchen is large, has two windows, an open fire-place, and adjoins a commodious pantry, and a bedroom. The Pantry has a large window, and is shelved on one side

and end. A convenient Clothes-press opens from the right-hand bedroom. The Chimney is near the center of the house, insuring much saving of heat. The interior of this house may be comfortably warmed from a single fire, by placing a Radiator in the parlor, and leading the fire-draught from the kitchen stove through it. As the peculiar form and construction of this radiator is comparatively new, having originated with me, a description is here given, which will enable any skillful sheet-iron worker to make

one (see figs. 9 and 10) : *A*, is the parlor side of the chimney-breast ; *B*, the kitchen side ; *C*, chimney-flue ; *D*, kitchen fire-place, containing kitchen-stove ; *E*, smoke-pipe leading from the stove through the throat-piece, into the chimney-flue ; *F*, *F*, stove-pipe branches passing through the back of the fire-place, and connecting the smoke-pipe, *E*,

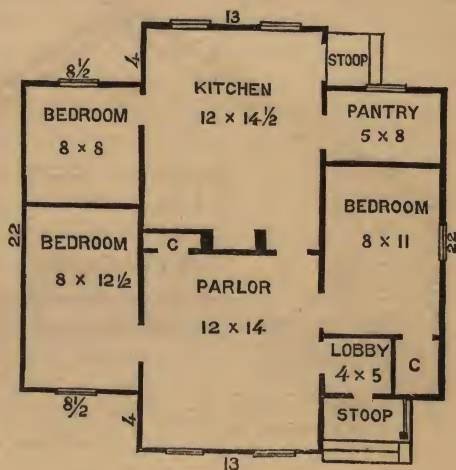


Fig. 8.—GROUND-PLAN.

with the radiator ; *G*, interior section of radiator ; *H*, face of radiator ; *I*, partition within radiator. The draught is regulated by a damper, *J*, in the smoke-pipe *E*, between the branches, *F*, *F*, and is forced through the radiator as required. The radiator may be made of any size desired to fit the mantle-opening, and if neatly constructed of Russian iron, will be quite ornamental.

The partition, *I*, is 5 inches wide, and extends to within 6 inches of the bottom at either side, has turned edges, and is riveted to the front and back. In use, to start the fire, a direct draught is made by opening the damper, *J*, after which it may be closed to turn the draught through the lower branch-pipe into the central part of the radiator, where it descends, passing the lower ends of the partition, *I*, into the side passages, where it ascends and enters the upper branch-pipe, leading to the smoke-pipe, *E*. The bottom should have a collar to slide within the upright part, to facilitate cleaning when necessary. If

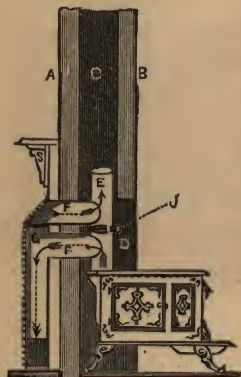


Fig. 9.—RADIATOR.

there is no hearth-stone to set the radiator upon, the bottom may be filled with an inch deep of coarse plaster, which will make it safe even on a carpet. In setting the radiator, an inch or two of open space should be left between it and the chimney-back (just the thickness of the interior wall-plates of the mantle, against which the radiator should join.) Into the bottom of this space, air may be introduced from the outside of the house, through a two-inch pipe. The air thus let in becomes heated, and es-

capates around the margin, furnishing a pure healthful supply to the room.... CONSTRUCTION.—The estimate annexed, includes materials, and methods of construction similar to those described for Design II. The form and arrangement of this building admits of its being erected in sections; the central or main part may be first put up, and the side extensions added as means or necessity requires or allow. In localities where it is difficult to get dressed lumber, rough boards may be used for the siding, put on vertically, and battened, but in this case it would

be practical to paint the cornices and other dressings only with lead and oil—using a lime-wash for the



Fig. 10.—RADIATOR.

rough work. A durable wash may be made by slaking freshly-burned lump-lime in hot brine. This can be colored by adding dry-stainers as desired, and may be applied with an ordinary whitewash brush. Such work would greatly reduce the cost, and, if properly done, add a feature of rustic beauty,

quite becoming in this class of building.

ESTIMATE cost of materials and labor :

340 ft. stone foundation, at 5c. per ft.	\$17.00
1,000 bricks in chimneys, laid, at \$12 per M.	12.00
290 yards plastering, at 25c. per yard.	72.50
800 ft. of timber, at \$15 per M.	12.00
2 sills, 4×6 in. 30 ft. long.	8 posts, 4×6 in. 13 ft. long.
2 sills, 4×6 in. 13 ft. long.	2 plates, 4×6 in. 30 ft. long.
2 sills, 4×6 in. 22 ft. long.	2 plates, 4×6 in. 13 ft. long.
4 sills, 4×6 in. 9 ft. long.	2 plates, 4×6 in. 22 ft. long.
300 wall-strips, at 13c. each.	39.00
70 plank rough spruce, 1½×10, at 16c. each.	11.20
130 siding, dressed pine, ½×10, at 25c. each.	32.50
176 shingling-lath, at 6c. each.	10.56
30 bunches shingles, at \$1.50 per bunch.	45.00
82 flooring, dressed spruce, at 20c. each.	16.40
8 windows, at \$5 each, \$40; 10 doors, at \$3 each, \$30.	70.00
Closet and base finish, \$16; cornice materials, \$15.	31.00
Nails, \$10; painting, \$60; cartage, \$14.	84.00
Carpenter's labor, \$75; incidentals, \$21.84.	96.84
Total cost, complete.	\$550.00

DESIGN IV.

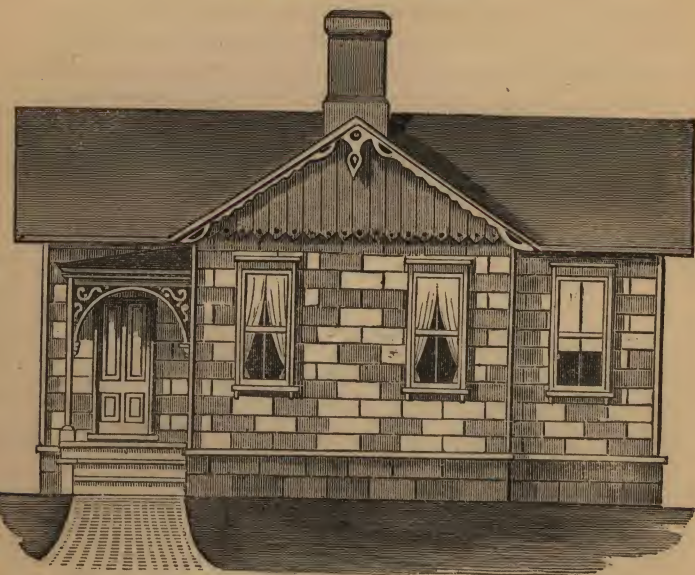


Fig. 11.—FRONT ELEVATION OF HOUSE.

A COUNTRY HOUSE, COSTING \$550 TO \$700.

This plan of a low-priced dwelling is adapted to the wants of many living in the country. It will accommodate a small family well, and has a pleasing appearance. EXTERIOR, (fig. 11.)—The Front has a sufficient variety of parts to insure a fair degree of picturesqueness. An allowable amount of neat tracery is admitted in the composition of the gables, and between the piazza columns, to give an expression of taste and cheerfulness. More than this would not accord with the utility and economy especially aimed at in these low-priced plans. If intended for a Summer Cottage, or Gate-lodge, for persons of larger means, the matter of exterior dress would assume quite a different aspect, and admit of

more liberal treatment. . . . GROUND-PLAN, (fig. 12.)—The arrangement shown is adapted to an *eastward* frontage, placing the Entrances and the Living-room on the pleasant side, where least exposed to northerly winds and cold. Should an opposite frontage be selected, the plan may be suited to it by reversing the sides, as this would be reflected if held

before a mirror.

The height of the ceilings are 10 feet. The front entrances open directly from the piazza to the parlor and living-room. These entrances may be protected in winter by a sash inclosure, forming a pleasant vestibule of a part of the

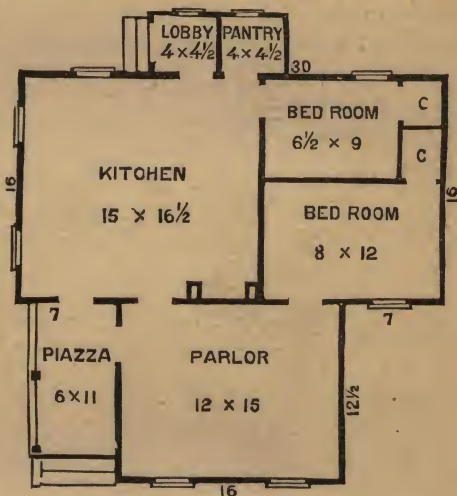


Fig. 12.—PLAN OF FIRST FLOOR.

piazza. The principal rooms are a Parlor, Kitchen, and two Bedrooms. The Parlor is in front of the main building, and of sufficient size for the ordinary uses of such an apartment. The Kitchen is intended as the Living-room, where the family, maintaining the simplicity of cottage life, spend much of their in-door time, sharing together the domestic cares and comforts. It is sufficiently spacious to admit of the requisite furniture, and allow of the ordinary family gathering without crowding. It has three windows; if desired, the upper part of the front door may have sashes, giving views in three directions. The pantry and lobby, at the rear, are of equal

size, both opening from the kitchen. The two Bedrooms adjoin each other (but have no communication between them in the plan. This may be arranged as desired.) One opens from the parlor, the other from the kitchen, and each has a closet. The Chimney is placed between the kitchen and parlor, with an open fire-place on the kitchen side. The method of heating, described for Design III., would insure the comfortable warming of both

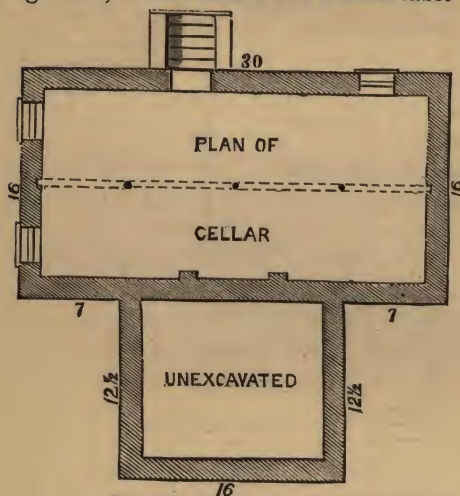


Fig. 13.—PLAN OF CELLAR.

of the principal rooms from one kitchen fire...

CELLAR, (fig. 13.)—Height, $6\frac{1}{2}$ feet. The dimensions embrace the space below the kitchen and the bedrooms; it has three windows and an outside entrance. The part under the parlor is unex-

cavated CONSTRUCTION.—The Foundation-walls are of broken stone and mortar, and show 2 feet above ground. Those under the parlor are laid in trenches, extending below the reach of frost. The chimney is of hard brick and mortar. The frame-work, roofing, and exterior plastering, are similar to those described for Design VI. The gables are inclosed with vertical boarding, having their lower ends cut to pattern, and are battened over the joints. The ornamental verges in the gable-cornices are of pine-boards, and, being of simple design, are readily made, and put in position while building. A pleasing

effect is produced by "lining off" the surface of the exterior plastering into courses or squares. This is easily done with a "straight-edge," and an **S** shaped iron while finishing. The final "Stearate" covering (see Design VI.) may be divided and shaded in two parts, and so applied as to give the alternate squares slight changes of shade. The best results may be obtained from *exterior plastering* where properly done. It is impervious to either air or water, and therefore equals the more expensive methods of inclosures for houses of this character. It should not be attempted over *horizontal* lines of framework, as the shrinking and consequent contraction will cause a bulging and cracking of the plaster at those points. Whenever obliged to cross such timbers, the upright framework must be halved on to them, and continued in whole lengths, to prevent such contractions. All joinings with the exterior wood-finish must be carefully made, especially at the top, to prevent water from entering, and running down behind the walls. Wide projectives of cornices afford a valuable protection for such walls against driving storms. Exterior plastering may be done in any season that is free from frost. An ordinary rain will do no injury to either of the two coats of plaster after they have become "set." The "Stearate" should be applied as soon as the plastering is thoroughly dried.

ESTIMATE for cost of materials and labor :

54 yards excavation, at 20c. per yard.....	\$10.80
1,300 ft. foundation, at 10½c. per ft.....	136.50
1,250 brick, laid, at \$12 per M.....	15.00
28 ft. stone steps and sills, at 28c. per ft.....	7.84
120 yards exterior plastering, at 30c. per yard.....	36.00
224 " interior " 25c. ".....	56.00
1,700 ft. of timber, at \$15 per M.....	25.50
2 sills, 3×8 in. 30 ft. l'ng 3 plates, 4×6 in. 16 ft. long 7 beams, 3×8 in. 13 ft. long	
3 sills, 3×8 in. 16 ft. l'ng 2 plates, 4×6 in. 13 ft. long 10 beams, 2×8 in. 16 ft. long	
2 sills, 3×8 in. 13 ft. l'ng 9 posts, 4×6 in. 10 ft. long 7 beams, 2×8 in. 13 ft. long	
2 plates, 4×6 in. 30 ft. l'g 14 beams, 3×8 in. 15 ft. l'ng 1 piazza, 2×8 in. 18 ft. long	
200 wall-strips, at 10c. each, \$20; cornice materials and gable finish, \$18.25	38 25
180 shingling-lath, at 5c. each, \$9.00; 16 spruce-planks, at 20c. each, \$3.20.	12.20
34 bunches shingles, at \$1.25 per bunch.....	42.50
80 flooring-planks, at 20c., \$16; piazza, \$40.....	56.00
3 cellar-windows, \$9; 8 plain windows, \$56.....	65.00
11 doors, \$44; closet-finish, \$12; nails, \$10; carting, \$12.....	78.00
Painting, \$30; carpenter's labor, \$75; incidentals, \$15.41.....	120.41
Total cost.....	\$700.00
If cellar is omitted, deduct, \$167.14. Cost without cellar.....	\$532.86

DESIGN V.

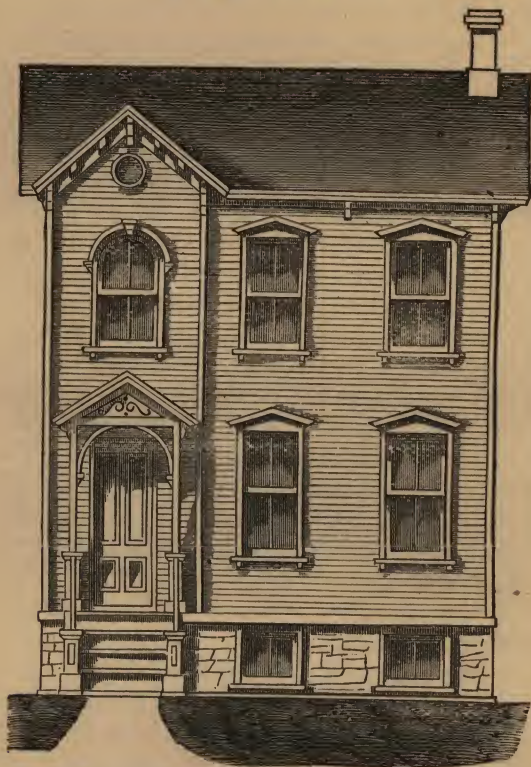


Fig. 14.—FRONT ELEVATION.—Scale, 8 feet to 1 inch.

A CONVENIENT HOUSE, COSTING \$650.

The accompanying plans were designed for a simple, compact, and economical house, and will be appreciated by any one who may desire to know just how little is required to build a comfortable home. They provide ample room for a small family.... The CELLAR extends under the whole house, the walls are built as shown in the

details of foundation and frame, given in Design VI., with 3 feet of masonry and 3 feet of frame-work.... The FIRST STORY contains a good-sized Hall, Parlor, and Kitchen, or Living-room, with two closets, pump, and sink. The stairs to the cellar lead directly from the

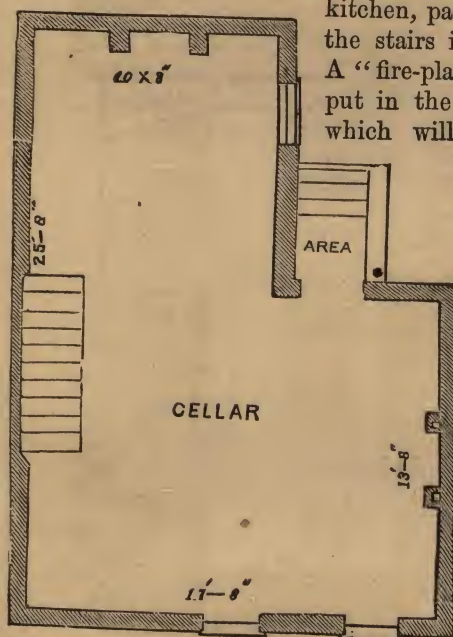


Fig. 15.—CELLAR.—Scale, 8 feet to 1 inch.

kitchen, passing down under the stairs in the main hall. A "fire-place heater" can be put in the parlor fire-place, which will also warm the chamber above.

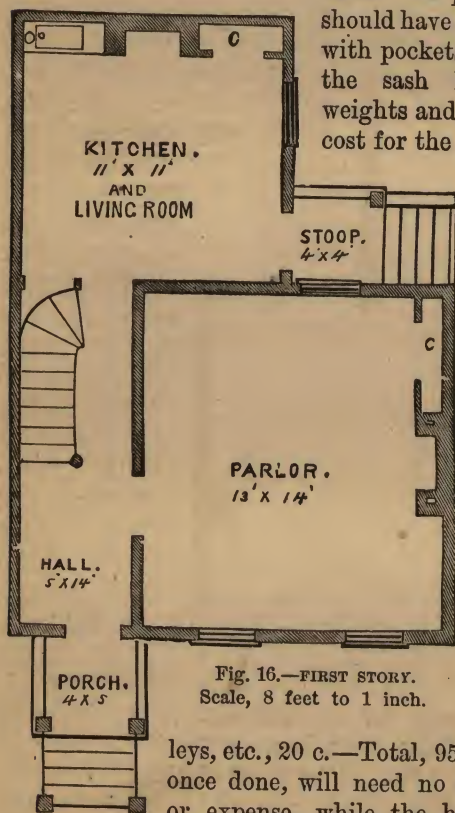
This method of heating is economical, and occupies but little room..... The SECOND STORY has three good-sized rooms, two closets, and small hall, in the main house, and an attic over the kitchen. The floor of the attic is one foot lower than that of the main house; this

gives valuable room for storage, etc.... The height of the first story of the main house is 8 feet 6 inches; of the second story, 7 feet. The height of the kitchen ceiling is $7\frac{1}{2}$ feet. The attic is arranged to have just standing room in the center.... A great saving of time and trouble is made, when openings are provided for *regular* sizes of sash, blinds, and doors, as they may be obtained of seasoned and well-made stock, at any time, from any

dealer in such materials. These plans are drawn with reference to such regular sizes, viz. : the first-story windows are 2 ft. 7 in. $\times$ 5 ft. 6 in. ; second story, 2 ft. 7 in. $\times$ 4 ft. 6 in. ; cellar, 2 ft. $\times$ 2 ft. 8 in., all $1\frac{1}{4}$ inch

thick. All principal windows should have their frames made with pockets and pulleys, and the sash hung with iron weights and good cord. The cost for the addition of these

necessary parts, beyond what is required for the plain frame, is about as follows, for each window of ordinary size: 4 pulleys, (at 40c. per doz.) 14c.; 20 lbs. iron weights, $2\frac{1}{2}$ c. per lb., 50c.; $\frac{1}{2}$ lb. sash-cord, 16c. per lb., 8c.; 1 doz. screws, $\frac{7}{8}$ in., 35c. per gross, 3c.; labor putting in pockets, pulleys, etc., 20 c.—Total, 95 cents, and when once done, will need no further attention or expense, while the house lasts. The



satisfaction of having neat-fitting, easy-working sash, where the upper, or lower one, may be opened at will, is great. The saving of little fingers, and older nerves, to say nothing of shattered sash and glass, more than repays

the extra cost of hanging sash The front, rear, and parlor DOORS are 2 ft. 8 in. $\times$ 6 ft. 8 in. $\times$ 1 $\frac{1}{2}$ in. ; other first-story doors, 2 ft. 6 in. $\times$ 6 ft. 8 in. $\times$ 1 $\frac{1}{2}$ in. ; second-story doors, 3 ft. 6 in. $\times$ 6 ft. 6 in. $\times$ 1 $\frac{1}{2}$ in. ; all 4-paneled, and neatly moulded. The 1 $\frac{1}{2}$ -inch doors have mortise-locks ; other doors rim-locks, all with porcelain knobs and escutcheons BLINDS are included

for the first and second stories, in the estimate appended, at an average cost of \$2.40 per pair, and may be omitted, but are recommended as useful ; they protect the sash from storms, and can be operated to give almost any desired

light or shade in the rooms

Many people may be in circumstances that would justify the building of one part of a house first, to be occupied as a temporary residence until means and opportunity warrant the building of the whole. A

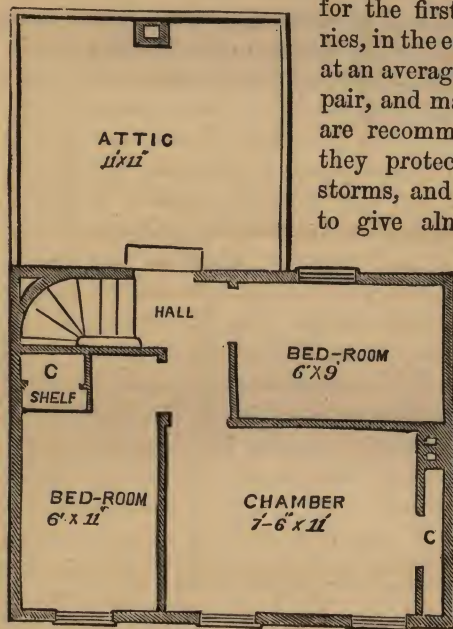


Fig. 17.—SECOND STORY.—Scale, 8 feet to 1 inch.

newly-married couple could arrange to have the kitchen part built as a residence for a season, rather than forego the opportunity of setting out trees, vines, and shrubbery, planting, and otherwise developing their grounds. They would then be near the work when building the main part, to superintend it, and care for materials, sav-

ing much that is often wasted, or lost. The wing, or kitchen part, could be built at a cost of about \$185, so arranged as that the main house could be joined to it at any time—or, what would be better, the main house may be built first, at a cost of about \$650, and the kitchen added at convenience. . . . The exterior dressing of cornice, window-caps, and stoop, are decided in their character for simplicity and boldness, giving a generous and finished appearance to the whole. . . . NOVELTY SIDING, fig. 18, is mentioned in many of the estimates for these houses. This form of siding I first introduced some sixteen years ago, since which time it has grown into general favor and use in this neighborhood. It has the following merits to recommend it: 1st, It is easily put on by ordinary mechanics. 2d, When properly nailed to the frame, it strengthens it, so as to make bracing of the frame almost unnecessary. 3d, The spaces between the studding, when the interior is plastered, are each air-tight compartments, containing only stationary air, which is a non-conductor of cold (or heat), thus protecting the inside wall from the extreme changes of outward temperature. 4th, A cheaper quality of lumber can be used, the more cross-grained the materials, the less likely they are to check, or shrink, and any small, sound knots are easily covered with shellac before painting, which closes them effectually. 5th, The general surface is even, so that any brackets or other ornamentation can be put on without the trouble and difficulty of "scribing" them up to the clap-boarding. . . . The SHINGLING referred to in the estimate is of 18-inch pine shingles, and may be laid $5\frac{3}{4}$ inch to the weather, and secured with large-headed "shingle-nails." It is best in laying shingles to lap at one-third the breadth, never in the center, for should one shingle check in the center, as they are liable to do, an opening is made through the



Fig. 18.—“NOVELTY SIDING.”

three courses, and a leaky roof will be the result. "Shingling-lath" $1\frac{1}{4} \times 2$ in., with the lower edge placed just where the butts of the shingles would cover, will allow air to freely circulate on both sides of the shingles, and preserve them one-third longer than when laid on close planking, which holds the moisture, and assists decay of every part of the roof. . . . GUTTERS.—The old wooden gutter has nearly gone into disuse, and always seemed a barrier to any satisfactory finish of cornice. It was difficult to get timber of sufficient width for projections, and in such cases, the cornices were proportioned by boxing off, and building up around this "gutter-stick," which was bad construction—the outer-edge of the gutter, being higher than the edge next the house, would cause the water, during heavy storms, or when

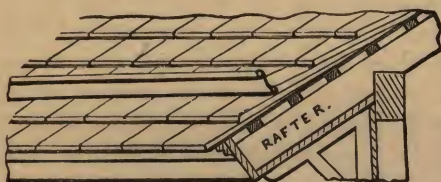


Fig. 19.—PORTION OF ROOF AND GUTTER.

the leader was choked up, to flow over against the frame-work of the building, which was one of the most frequent causes of decay and settling in the older houses in this country.—The tin-lined "box" and "trough" gutters are often troublesome; the tin can not be laid in them except in long lengths, which have been soldered together while flat and smooth. To lay these long lengths into the ready-formed gutter, requires much bending and hammering, which breaks the best tin at the soldered joints, on the under-side, where it is impossible to repair it, so that, while it may not appear at once to leak, it is sure to do so soon, to be discovered after the cornice has been swelled out of shape or destroyed. The gutter that I have adopted in all cases where practicable (see section, fig. 19), either for shingles or slate, is made of charcoal-

tin, 14 inches wide, in lengths as long as can be well handled. One edge is turned or rolled up around a $\frac{5}{8}$ iron rod, which makes a strong edge. Then a bend is made at $3\frac{1}{2}$ inches from the turned edge, forming a right angle the whole length. This is laid on the second course of shingles, with one end lower than the other, so as to give a good run for the water. The ends are turned up, where required, to stop the water, and a tube put through the cornice in the usual manner.... For TIN ROOFS, having a pitch of at least one inch to the foot, the gutters are formed in a similar manner, with the flat, or bottom part, about $\frac{1}{2}$ inch wide, making a flange, which is soldered to the roof near the eaves, to a line drawn at an angle to make one end lower than the other, as for shingle roofs. This is the simplest and best kind of gutter, will outlast any other, and in the event of a possible damage, or leakage, no harm will be done beyond the loss or waste of the water that runs off over the eaves. It can be easily repaired, or replaced at any time, without interfering with the principal roof, and it saves the trouble and expense of building and boxing for gutters, or of making cornices with special reference to them, and it is cheaply constructed.—ESTIMATE OF COST of building by this plan in the vicinity of New York City :

38 yards excavation, at 20c. per yard.....	\$7.60
5,000 brick, furnished and laid, at \$12 per M.....	60.00
230 yards lath and plastering, 3 coats, at 28c. per yard.....	64.40
1,412 ft. timber, at \$15 per M.....	21.18
1 sill, 3×8 in. 92 ft. long.	1 girt, 4×8 in. 12 ft. long.
4 posts, 4×6 in. 21 ft. long.	2 ties, 4×6 in. 16 ft. long.
2 plates, 4×6 in. 19 ft. long.	2 ties, 4×6 in. 19 ft. long.
2 plates, 4×6 in. 12 ft. long.	18 beams, 3×8 in. 16 ft. long.
10 beams, 3×7 in. 12 ft. long.	
1 locust-post, 4 inch.....	35
220 wall-strips, 2×4 in. 13 ft. long, at 10c.....	22.00
160 novelty siding-boards, 9½ in., at 28c.....	44.80
30 rabbeted siding, 9½ in., at 28c., \$8.40; 92 ft. cornice materials, \$15...	23.40
100 shingling-lath, at 6c., \$6; 16 bunches shingles, at \$1.50, \$24.....	30.00
Tin gutters and leaders.....	7.00
90 tongued and grooved flooring, 9½ in., at 30c.....	27.00
8 windows with blinds, at \$8, \$64; 3 cellar windows, plain, at \$3, \$9...	73.00
2 stoop materials, \$20; stairs, 1st story and cellar, \$40.....	60.00
12 doors and materials.....	48.00
Carpenter's labor (not included above).....	75.00
Painting, two coats, \$40; cartage, average one mile, \$12.....	52.00
Extras, for base, sink, pump, and nails, etc.....	34.27
Total cost of materials and construction.....	\$650.00

DESIGN VI.

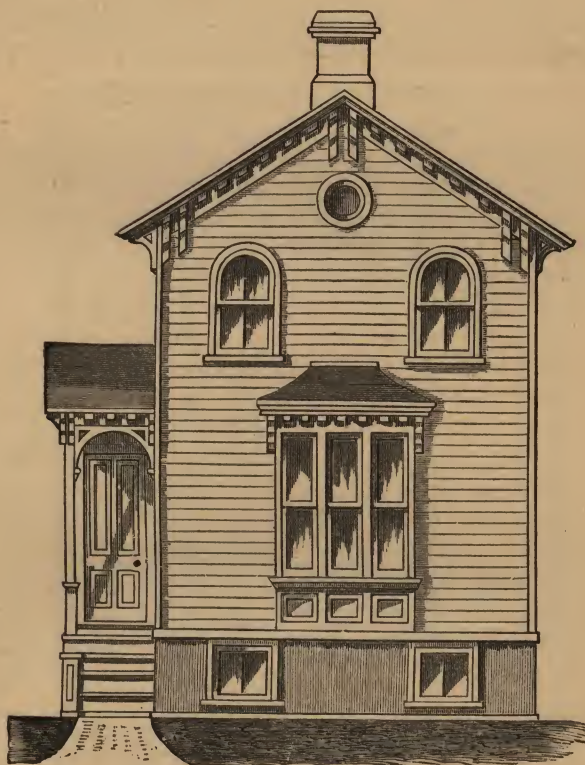


Fig. 20.—ELEVATION OF HOUSE.—Scale, 8 feet to 1 inch.

A HOUSE COSTING \$700.

The plans here given are of simple design, intended to meet the large and increasing demand for low-priced country or village houses, having at the same time some architectural beauty. Without this latter feature, a comfortable house of this size can, in many places, be erected

for much less than \$700 even....The house here described provides for as much room as a small family would require, while at the same time it admits of future enlargement, as one's necessity or means may indicate, by

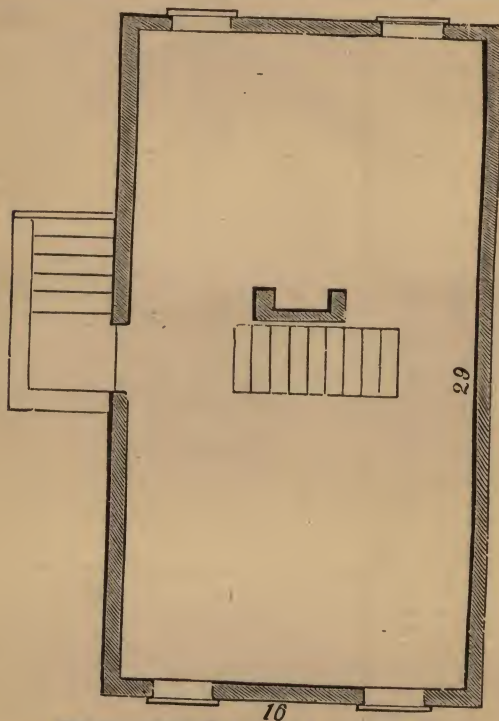


Fig. 21.—CELLAR.—Scale, 8 feet to 1 inch.

additions, ells, or wings, at either side, or rear. In all cases, when planning small houses, it is best to provide for such enlargements. The triplet window in front is so arranged that it can be readily changed to a bay-window, when that improvement can be afforded, without marring the rest of the wood-work, or the harmony of the front elevation.... The Cornice of the main building

is bracketed, and projects sufficient to relieve it of the stunted look so common to country houses. The brackets are made of 2×4 -inch timber, in three pieces each, mitred to the angles required, and nailed together (see

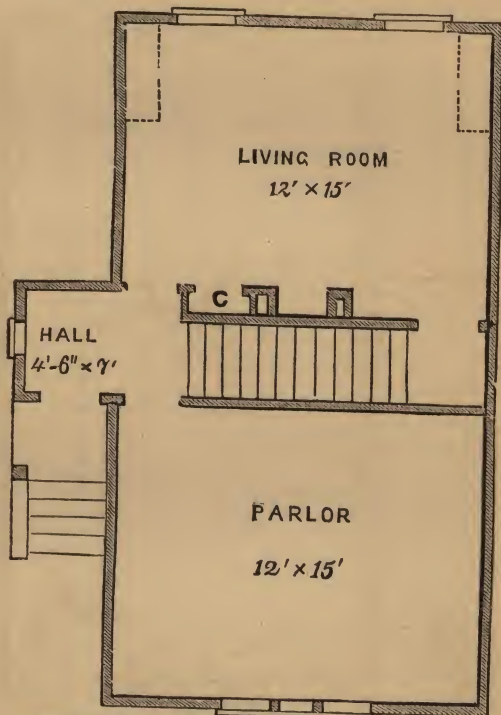


Fig. 22.—FIRST STORY.—Scale, 8 feet to 1 inch.

fig. 25), making an effective support and pleasant appearance. . . . A large saving in expense of foundations is secured by the following method of construction (see section of foundation and frame, fig. 24). The excavation is made for the cellar $2\frac{1}{2}$ feet deep. A foundation of 8-inch brick-work, 3 feet high, or 6 inches above the level of the ground only, is required. A sill of 3×8 -inch

timber is laid on, and "flush" with the inside of the wall, to provide nailing for the wainscoting of the basement, if it is afterwards finished off.... The beams or joists for the first floor are supported by a plank-strip five

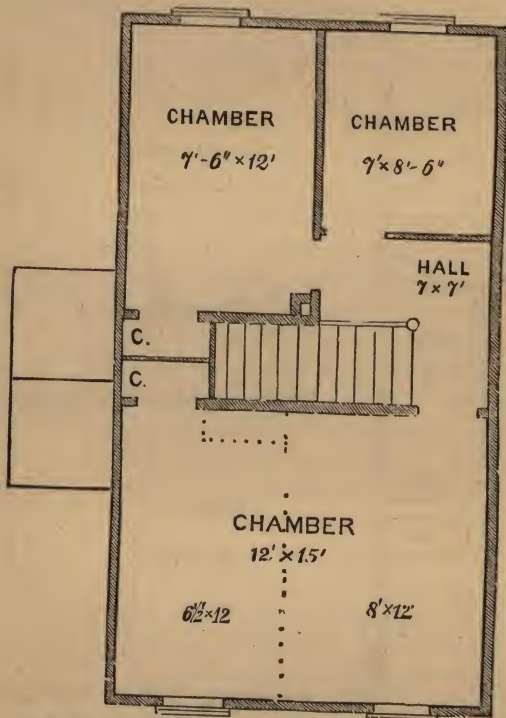


Fig. 23.—SECOND STORY.—Scale, 8 feet to 1 inch.

inches wide, let into the inside of the frame at a proper height, and securely fastened with heavy nails. The other parts of the framing are executed, and the whole raised, in the usual manner.... The inclosing, or siding, below the first story, is of 10-inch boards rabbeted and cross-grooved in imitation of large stone-work, and painted in

contrast with the principal body of the house, and the water-table is put just above them. . . . Many small houses in the country are built without any permanent foundation, but are temporarily supported on posts set in the ground, and "boarded down." They are always shaky, and doubtful while they stand, and are frequently blown over altogether. As will be readily seen, the above method provides for the saving of one-half of the mason-work in the foundation. In many places stone is abundant, and will answer the same purpose as brick in this case, except for the 6 inches above ground. The laying up of a single-face wall, $2\frac{1}{2}$ feet high, of rough stone and mortar, would cost but a trifle. If the cellar should be finished at any time for basement purposes, these walls would be much drier and more healthful than when the walls are entirely of masonry. In this case it would be preferable to have the foundation walls 6 inches higher, so as to have the basement rooms 7 feet in the clear. . . . Several houses have been built on this plan in villages, and in most cases it has been decided not to have any rear outside door for the first story (fig. 22), but to wait until a kitchen could be finished in the front part of the cellar, when the common entrance would be by the area to the kitchen. In the plan (fig. 22), we have indicated two rear windows, but a door may take the place of either of them. We have also indicated by dotted lines where pantry, sink, etc., may be placed in the corner, according to the wishes of the proprietor. . . . There is but one chimney. The parlor is heated by running a stove-pipe

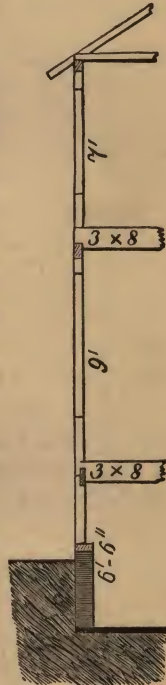


Fig. 24.

through earthen thimbles placed in the partitions under the stairs, to the chimney, which is perfectly safe, and no heat is lost. When desired, a fire-place, or stove-pipe flue, may be carried up through the parlor, as well as through the living-room, and the two be brought together above the stairs into one chimney.



Fig. 25.

....The SECOND STORY, (fig. 23), may be divided into three rooms, the front one being 12×15 feet; or, if preferred, this front room may be divided into two smaller rooms, as indicated by the dotted lines. One may be 8×12 , and the other $6\frac{1}{2} \times 12$. The latter would be large enough for an ordinary bed ($4\frac{1}{2} \times 6\frac{1}{2}$ feet), with stand or chair by the window; and in this case a small

closet could be cut off from the corner, opening into the large room, as shown by the dotted lines.

Cost.—The following estimate in detail, at present prices, near this city, will enable any one to determine the cost of building by this plan. Allowance can be made for any difference in cost of materials or labor as required in other localities:

43 yards excavation, at 20c. per yard.....	\$8.60
6,000 brick, laid complete, at \$12 per M.....	72.00
1,636 ft. timber, at \$15 per M.....	24.50
2 sills, 3×8 in. 29 ft. long.	
4 posts, 4×7 in. 21 ft. long.	2 sills, 3×3 in. 16 ft. long.
2 ties, 4×6 in. 29 ft. long.	28 beams, 3×8 in. 16 ft. long.
2 ties, 4×6 in. 16 ft. long.	2 plates, 4×6 in. 29 ft. long.
	2 plates, 4×6 in. 16 ft. long.
32 rafters, 3×4 in. 12 ft. long, at 20c.....	6.40
200 wall-strips, 2×4 in. 13 ft. long, at 11c.....	22.00
162 novelty siding-boards, $9\frac{1}{2}$ in., at 23c.....	45.36
28 rabbeted siding, 10 in., at 28c.....	7.84
97 flooring spruce, $9\frac{1}{2}$ in., at 28c.....	27.16
123 shingling-lath, $1\frac{1}{2} \times 2$ in., at 6c.....	7.38
22 bunches shingles, 18 in., at \$1.25.....	27.50
14 windows, with blinds, two stories, 9 at \$8; 5 at \$3.....	87.00
2 stairs, \$25; 11 doors and trimmings, \$44; 1 stoop materials, \$10.....	79.00
14 rough spruce-plank, $1\frac{1}{2} \times 10$ in., at 30c.....	4.20
100 feet cornice materials.....	20.00
Carpenter's labor (not included above).....	90.00
350 yards plastering, three coats, at 25c.....	87.50
Cartage, average one mile.....	12.00
Painting, two coats, \$40; extras, for tin, nails, etc. \$31.50.....	71.50
Total cost in above style.....	\$700.00

DESIGN VII.

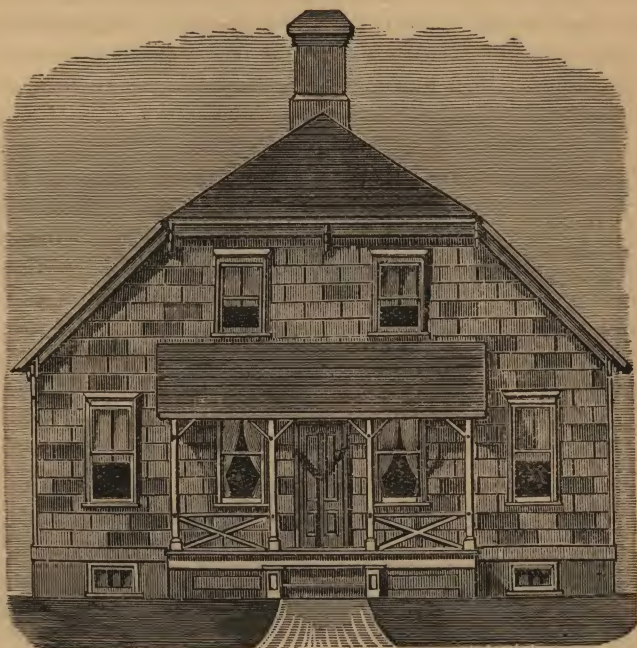


Fig. 26.—ELEVATION OF FRONT OF HOUSE.

COUNTRY HOUSE, COSTING \$750 TO \$1,050.

These plans represent a commodious dwelling house, constructed with especial regard for economy and utility, and they will be appreciated by those desiring to provide a comfortable, permanent shelter for home by the use of limited means.... ELEVATION, fig 26).—In preparing plans for “low-priced” houses, the simplest outlines are indicated. Having to combine usefulness and small outlay, there can be no latitude for architectural display, beyond mere matters of accommodation and complete-

ness. The exterior of this example fairly expresses its domestic purpose. The breadth of the front, the preponderance of horizontal lines, and the hooded roof, are each indicative of strength, and suggest its adaptation to rural situations. The satisfactory appearance of this house will greatly depend on its location. The best results would be obtained by placing it on a slight knoll, giving it additional altitude. This would prevent its being ob-

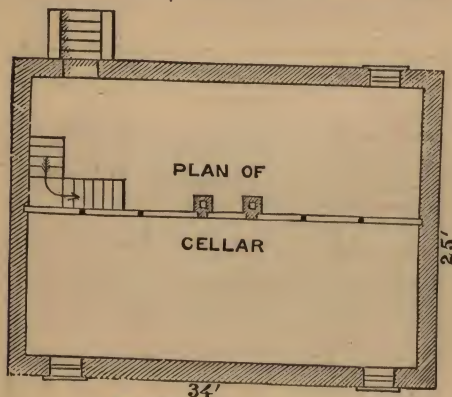


Fig. 27.—PLAN OF CELLAR.

scured by shrubbery and trees, which are indispensable accompaniments of a properly developed home-
stead.... CELLAR, (fig. 27).—Height, $6\frac{1}{2}$ feet. It has three windows, an outside entrance, and stairway leading to the kitchen

above.... FIRST STORY, (fig. 28).—Height of ceiling, 10 feet. The accommodations, consisting of five rooms, a pantry, and two closets, are adapted to a good-sized family. The Parlor and Kitchen are the principal rooms, and occupy the middle portion, their sides being protected by other rooms, and, having the fire-place between them, they are easily warmed. The device for heating described for Design III. would serve admirably in this house. Two Bedrooms adjoin the parlor. Many might choose to have *double* doors entering these bedrooms, to allow all three rooms to be used together occasionally. This would not preclude the use of the smaller ones as bedrooms, or, if preferred, as a sewing-room and a library.

The Kitchen is the largest apartment, and has doors leading to the pantry, bedroom, parlor, stairway, and the rear entrance. The outside or entrance doors may be protected in severe seasons by storm-doors hung to open outward, with loose joint-buts to allow of their ready removal. The rear veranda is similar to the front one

shown on the elevation.....

SECOND STORY, (fig.

29).—The front

portion only is

finished, with

ceilings 8 feet

high, and is di-

vided into two

chambers and

four closets. The

rear portion is

left unfinished, to

be used as an

open garret. The

space above the

ceiling of the fin-

ished portion

may be floored

over with boards, to serve for storage of quilting-frames,

trunks, etc....

CONSTRUCTION.—The excavations for

the cellar are 4 feet deep. The foundation-walls are of

broken stone, laid in mortar, and show 2 feet above the

earth-grade. A strong girder, resting on large posts, or

columns of stone or brick, supports the center of the

building. In setting the girder, it should be elevated

from $\frac{1}{2}$ to $\frac{3}{4}$ of an inch in the center, rising gradually

from each end, to allow for settling, which invariably

occurs from shrinkage of the interior frame-work. The

timber for the frame-work is indicated in the estimates

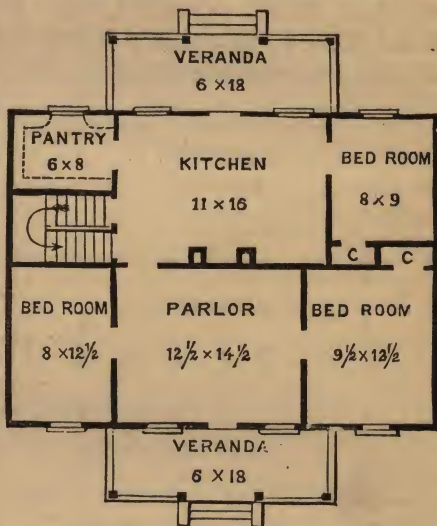


Fig. 28.—PLAN OF FIRST FLOOR.

below, and is substantially framed together. All the outside studding is *halved* over the principal timbers, to prevent vertical shrinkage from affecting the exterior covering of the side-walls. The exterior covering is of lath and plaster, as follows: all cornices and other dressings, and the roof, should first be completed—and all window and door frames set and cased. The outside frame should then be thoroughly lathed outside and inside. *All this is to prevent jarring or pounding on these parts*

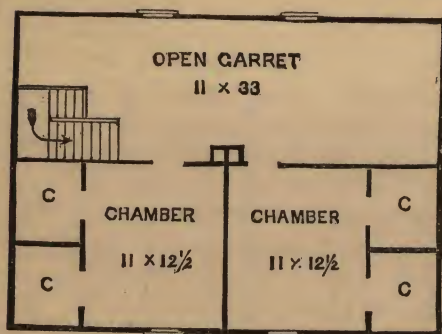


Fig. 29.—PLAN OF SECOND FLOOR.

during the application or setting of the plaster. The plaster is made in the usual manner of fresh lime and sharp sand, with half a bushel of hair to each barrel of lime used, and allowed to lay two weeks to insure

a thorough slaking and permeation of the lime. It is then applied in two coats—the first a “scratch,” the second a “browning.” The surface is floated with a darby, (not trowelled). After having stood a sufficient time to become dry, the whole is covered with a preparation called “Stearate of Lime,” using an ordinary white-wash brush. The formula for making this stearate of lime (known only to a few, who have treated it as a secret,) is here published for the first time, and it will be understood by those familiar with the nature and operation of slaking lime. The ingredients are simply fresh-burned finishing-lime, using the lumps only, unrendered beef-suet, and hot water. It is necessary that these parts be kept in lively motion while dissolving, or they will be

entirely destroyed by "burning." The usual process is to sink a large barrel, having an open end, 2 feet in the ground, pounding the earth around to make it firm. An upright piece, 4 inches in diameter, and 6 feet long, is set upright in the center of the barrel, and held in position by cleats at the bottom and top, leaving the upright free to turn. Arms are put through the upright within the barrel, and a cross-bar or lever is attached to the upper end—the whole making an apparatus similar to a "clay-mill." One bushel of lime, 20 lbs. of suet (chopped fine), and a barrel of boiling water are provided; and while one works the "mill," another feeds alternately lime, suet, and hot water. This quantity of material, costing about \$2, will make a full barrel of the preparation. Any desired shade may be afterwards given by adding stainers. This mixture is applied while hot—two coats being necessary to insure a thorough covering. This will also be found a valuable preparation for covering exterior brick or concrete work. It is impervious to water, and will outlast any of the paints prepared for such purpose. All other information concerning the finish of this house may be inferred upon a careful study of the following estimates.—ESTIMATE cost of materials and labor:

95 yards excavation, at 20c. per yard.....	\$19.00
1,062 ft. stone foundation, at 15c. per ft.....	159.30
24 ft. stone steps and coping, at 28c. per ft.....	6.72
2,000 bricks in chimneys, laid, at \$12 per M.....	24.00
517 yards plastering, inside, at 25c. per yard.....	129.25
130 " " outside, at 30c. per yard.....	39.00
1,850 ft. of timber, at \$15 per M.....	27.75
2 sills, 3×8 in. 34 ft. long.	2 plates, 4×6 in. 15 ft. long.
2 sills, 3×8 in. 25 ft. long.	2 perlines, 3×8 in. 25 ft. long.
1 girder, 4×8 in. 32 ft. long.	2 perlines, 4×6 in. 18 ft. long.
4 posts, 4×8 in. 11 ft. long.	100 beams, 1½×8 in. 13 ft. long.
3 ties, 3×6 in. 34 ft. long.	
300 wall-strips, at 11c. each.....	33.00
4 locust-posts, at 30c. each, \$1.20; 190 flooring, at 20c. each, \$38....	39.20
216 shingling-lath, at 6c. each.....	12.96
39 bunches shingles, at \$1.25 per bunch.....	48.75
3 cellar windows, at \$3, \$9; 12 plain windows, at \$7, \$84.....	93.00
17 doors, at \$4 each, \$68; 2 verandas, \$50 each, \$100.....	168.00
Stairs, \$20; cornice materials, \$18.....	38.00
Closet-finish and base, \$15; nails, \$12; cartage, \$20.....	47.00
Painting, \$40; carpenter's labor, \$100; incidentals, \$25.07.....	165.07
Total cost, complete.....	\$1,050.00
Omitting cellar and verandas would save.....	300.00
Total, after deductions.....	\$750.00

DESIGN VIII.

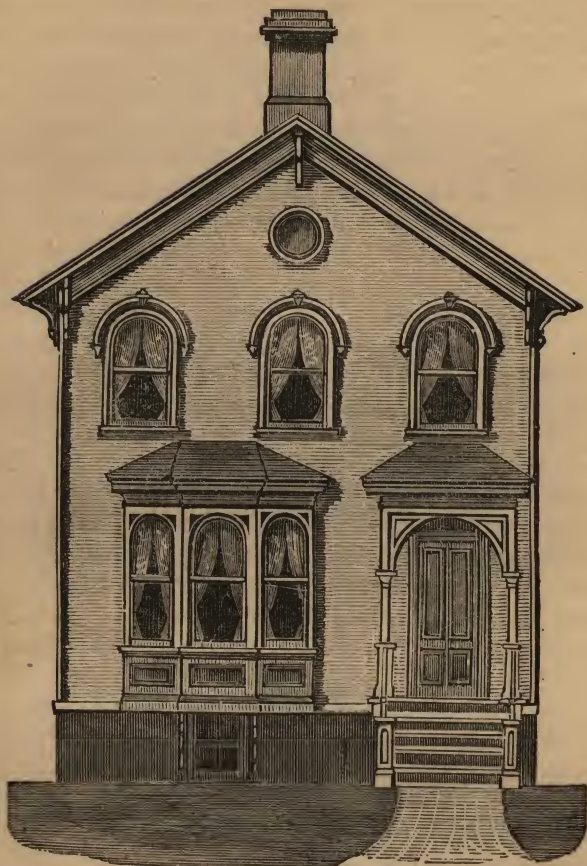


Fig. 30.—FRONT ELEVATION.

A COTTAGE, COSTING \$800 TO \$1,050.

This design is an enlargement of the small cottage described in Design I. The arrangements are very complete in convenience, appearance, and economy....Ex-

TERIOR, (fig. 30).—The outlines and style are simple. The front is enlivened by the Porch, Bay-Window, and other projections. The details of finish are of neat design, and in harmony, giving an agreeable expression of taste and refinement — features especially pleasing in cottage architecture.

.... CELLAR, (fig. 31). — Height in clear, $6\frac{1}{2}$ feet. It is under the main building only; has two windows, and stairs leading to the first story. It contains 378 feet area, giving abundant room for all ordinary requirements.....

FIRST STORY, (fig. 32). — Height of ceiling, 9 feet. The best use is made of the space by having but few divisions, leaving good-sized rooms.

The Hall is small, but is conveniently arranged to answer all necessary purposes. It is entered from the front porch, and communicates directly with the parlor and dining-room, and by the main stairs with the second story. There is sufficient room for a hat-rack

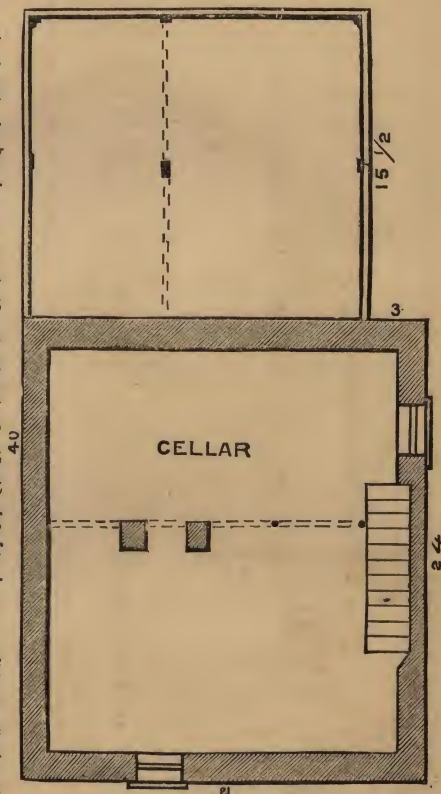


Fig. 31.—PLAN OF CELLAR.

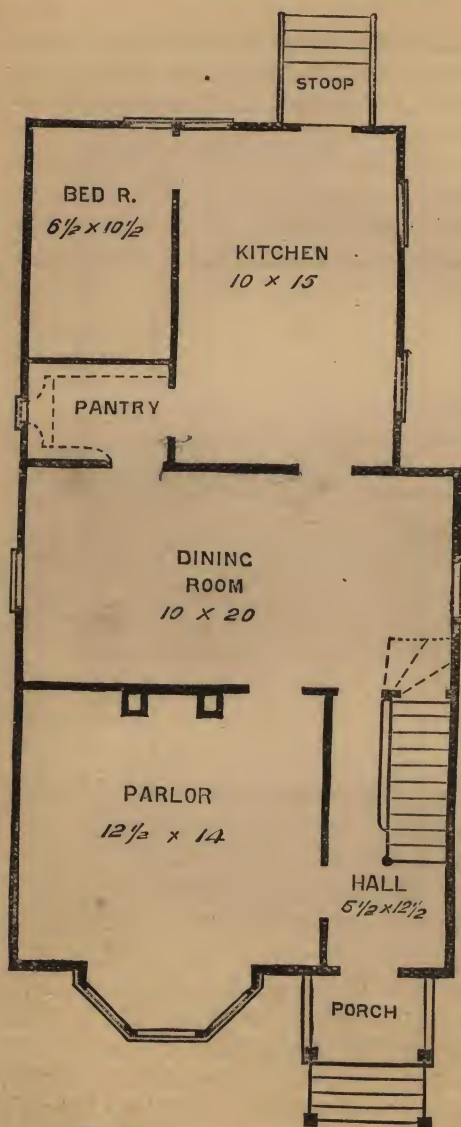


Fig. 32.—PLAN OF FIRST FLOOR.

at the right of the front door. The Parlor is of fair size, the large bay-window adding materially to its area and cheerfulness. With very little expense in furniture, this apartment may be made pleasant and cosy. The Dining-room extends the whole width of the house, and has a window at each end. It is conveniently arranged, with doors opening from the hall, parlor, kitchen, pantry, and to the stairs. The Kitchen is commodious and pleasant; has three windows, an outside rear entrance, and adjoins the din-

ing-room, pantry, and bedroom. The Pantry is sufficiently large and convenient to answer the requirements of both dining-room and kitchen. It has a small window, and is thoroughly shelved. The Bedroom opens directly from the kitchen. Its purpose in the partial erection (as shown in Design I.) may be changed in the completed building here described by making it an auxiliary of the kitchen for the coarser work; or, if needed, it may still be used as a bedroom for help.....

SECOND STORY, (fig. 33).—Hight of ceiling, 8 feet. There is a hall, two chambers, two bedrooms, and two closets, in this story, and no waste room. The Hall is just

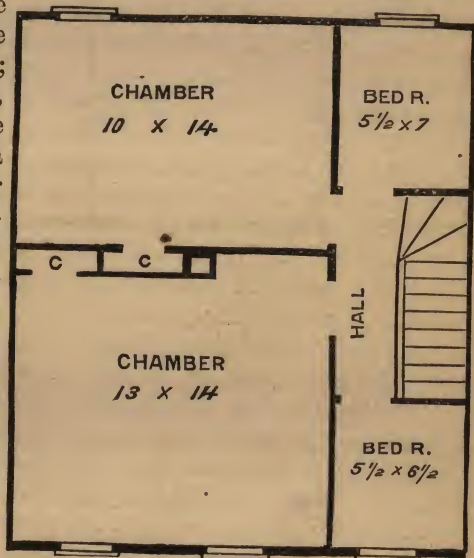


Fig. 33.—PLAN OF SECOND FLOOR.

large enough for convenience. The Chambers are of ample dimensions, with a chimney between them, admitting the use of stoves when required....

CONSTRUCTION.—The Foundations for the main house are of broken stone and mortar, showing three feet above ground, neatly pointed where exposed to sight. The Wing is supported on piers, as described in Design I. Girders (shown on the cellar-plan by dotted lines), supported on strong posts, carry the central portions of the building.

The shortness of the spans between bearings allow very light floor-beams. It is, however, important that the beams should be *bridged* to secure uniformity of strength, and prevent vibrations. The Frame is constructed in the usual manner—all the ties, girts, and headers being “framed in.” The inclosing is sufficiently indicated in the estimate. The front windows have semi-circular heads outside. In their construction the frames and sash are square, to admit ordinary curtain fixtures on the inside. The circular head is outside of, and “planted” on the flat casing, or “blind-strip,” and is made perfectly tight by a flange of tin. The additional expense of such circular finish is but trifling, compared with its good appearance. The side and rear windows have square heads, with rabbeted drips. Blinds are intended for all windows above the cellar. Ventilators are placed in each gable. The Porch has boxed pedestals and columns, scroll-sawed balusters, and circular spandrells. The inside walls and ceilings are “sand-finished” on two coats of brown mortar. The main stairs are constructed with a quarter circle, and winders at the top. These winders extend beyond the hall into the ceilings of the dining-room (as sketched), but do not interfere with its use, or seriously injure its appearance. The Bay-Window is neatly arched on the inside. Marble mantels are put in the parlor and dining-room, and shelves in the chambers. The second story-hall is lighted through the door (sash) of the front bedroom. . . . SUGGESTIONS.—This plan was arranged to suit a village lot 25 feet in width, leaving a passage-way at the side. This necessitated placing the wing at the rear of the main house. If there is more ground, the wing may be placed at the right of the main part, facing the road. The communications between the dining-room and wing would be still similar to those shown. The window at the right of the dining-room would be placed in the rear. These changes entail no extra expense, if

determined on before commencing to build.—ESTIMATE
cost of materials and labor for main house :

56 yards excavation, at 20c. per yard.....	\$11.20
875 ft. stone-foundation, at 5c. per ft.....	43.75
2,000 brick, furnished and laid, at \$12 per M.....	24.00
340 yards plastering, complete, at 25c. per yard.....	85.00
1,126 ft. of timber, at \$15 per M.....	16.89
2 sills, 4×6 in. 24 ft. long.	
2 sills, 4×6 in. 21 ft. long.	
9 ties, 4×6 in. 24 ft. long.	
4 ties, 4×6 in. 21 ft. long.	
4 posts, 4×6 in. 19 ft. long.	
2 plates, 4×6 in. 24 ft. long.	
1 girder, 4×6 in. 21 ft. long.	
22 beams, 3×6 in. 24 ft. long.	
250 wall-strips, at 11c. each.....	27.50
162 siding, 9 in., at 20c. each.....	32.40
Cornice materials.....	18.00
135 shingling-lath, at 5c. each.....	6.75
8 rough planks, at 20c. each.....	1.60
24 bunches shingles, at \$1.25 per bunch.....	30.00
112 flooring, 9 in., at 25c.....	28.00
2 cellar windows, complete, at \$4.....	8.00
1 bay-window, complete.....	40.00
5 plain windows, complete, at \$12.....	60.00
Stairs, complete, \$40; 12 doors, complete, \$96.....	136.00
Mantels, \$39.91; porch, \$30; closets, \$10.....	79.91
Nails, \$9; painting, \$50; carting, \$12.....	71.00
Carpenter's labor (not included above).....	80.00
Total cost of main house.....	\$800.00
Add Design I.'s estimate for wing.....	250.00
Total for whole complete.....	\$1,050.00

DESIGN IX.

COUNTRY OR VILLAGE COTTAGE, COSTING \$1,000.

This plan is designed to answer many requests for a "cosey and homelike Cottage, suited to the wants of Mechanics and Laboring People, costing from \$700 to \$1,000." It is best adapted to a westward frontage—with the hall, entrances, and porches protected from the north, but may be easily adapted to an opposite frontage by reversing the plan—placing the hall, etc., on the opposite side of the main house. The width, 21 feet, adapts it to a 25-foot village lot, leaving a side passage to the rear.... EXTERIOR, (figs. 34 and 35.)—The *style* of any building is determined by the form of its roof; the steep and hooded style in this design accords fully with domestic feelings and artistic sentiments, and is growing



Fig. 34.—FRONT VIEW OF COTTAGE.

in public favor for suburban structures. Compared with the usual *Mansard* style is more practical, less expensive, and serves equally well. The side-angles, porches, bay-window, cornices, and chimneys, each of simple construction, make up a pleasing variety of parts. All superfluous ornamentation is avoided.

A too common fault prevails in villages, and even in the country, of building close up to the street lines. A clear depth of at least 20 feet in front should be devoted to a flower-garden, shrubbery, and vines, for flowers are proper accessories of cottage adornment, and architectural ornamentation can never compensate for their

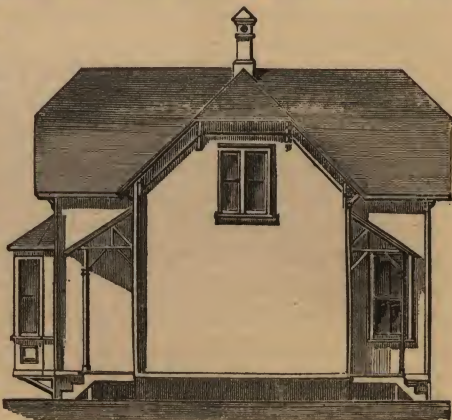


Fig. 35.—SIDE VIEW OF COTTAGE.

absence....CELLAR, (fig 36.)—Hight of ceiling, $6\frac{1}{2}$ feet. It extends under the front half of the building, giving an average area of $11\frac{1}{2} \times 15$ feet—quite sufficient for ordinary requirements. It has two small front windows. A good ventilation may be had through the chimney; openings in the rear foundation allow a circulation of air over the unexcavated portion....FIRST STORY, (fig. 37.)—

Hight of ceiling, 9 feet; is divided into a hall, parlor, living-room, rear entry, and a closet.

The Hall, entered from the front porch, connects through doors with the parlor, living-room, and rear entry, and contains the main stairs. The Parlor has a large bay-window in the front, opposite to which is a marble shelf resting on stucco trusses.

It communicates with the living-room and hall. The remaining wall spaces are unbroken, for furniture and wall ornaments. The Living-room is a little larger than the parlor, has two windows, an open fireplace, a closet, and doors leading to the front hall, parlor, and rear entry. The rear entry is under the platform of the main stairs; is divided from the front hall, and is to be used as the common entrance. It has doors leading from the front hall, living-room, rear porch, and the cellar stairs. The parlor may be warmed by placing a radiator under

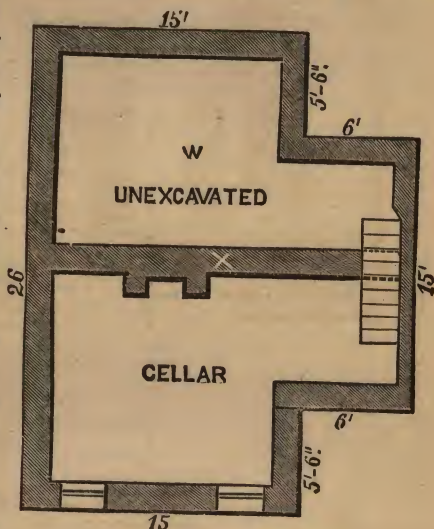


Fig. 36.—PLAN OF CELLAR.

the marble shelf, and passing the smoke-pipe from the living-room through it, as for Design III. The cost of such a radiator is \$6. . . . SECOND STORY, (fig. 38.)—Height of center ceilings, seven feet ; height of side-breast walls, $3\frac{1}{2}$ feet. The stairs leading to this story are made with a platform, placed three risers below the upper landing, which allows for the required head-room. The divisions provide for four rooms, a hall, and two closets ; the large

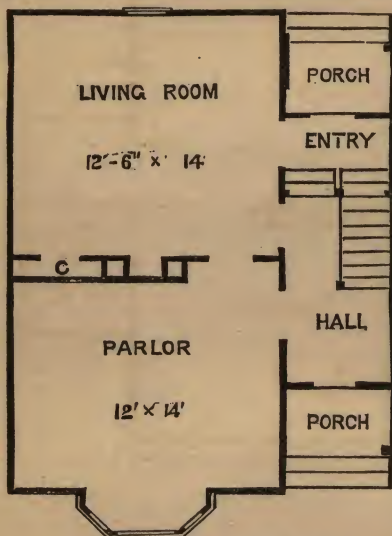


Fig. 37.—PLAN OF FIRST FLOOR.

chamber has a double window in front, a marble shelf on the chimney-breast, and a closet ; the hall bedroom is designed to be used in connection with the large chamber as a child's room. . . . CONSTRUCTION.—The excavation for the cellar is made four feet deep, and for the rear foundation walls one foot. The loose earth is graded around the foundation at completion, leaving $1\frac{1}{2}$

feet of the foundation exposed to sight on the outside. The foundation walls are of broken stone, laid in common mortar, 16 inches thick, and neatly pointed where exposed to sight, and are generally even with the framework on the outside. Provision is made for the cellar stairway by extending the adjoining walls beyond the inside of the frame to the height of the ground, and finishing above with brick-work. The chimney is started with the cellar walls, and arranged with two continuous flues

to the top. Side-openings are made under the cap by inserting 6-inch earthen thimbles on each side of the flues. The top courses of brick-work are laid across the entire chimney, making a solid and more lasting cap. Sheet-iron thimbles are put in the chimneys adjoining the parlor and front chamber. The framing, inclosing, flooring, etc., are done in a substantial manner, of materials indicated in the estimate below.

Beams placed two feet apart from centers; rafters and studding 16 inches apart. The cornice-trusses are made of 2×4 -inch timber, as shown in Design VI., and the shingling and gutters in Design V. Sash, $1\frac{1}{4}$ inch thick, glazed with second quality of French sheet-glass, counter-checked, and hung

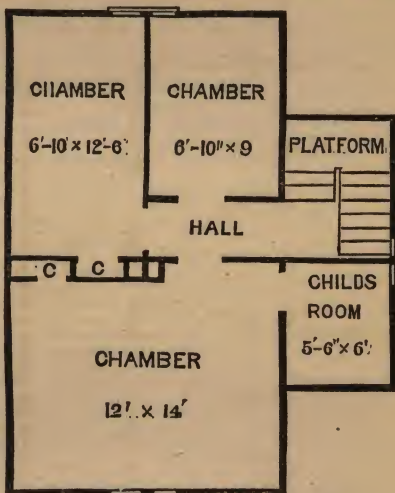


Fig. 38.—PLAN OF SECOND FLOOR.

to iron balance-weights, with good cord. Doors 4-paned each, for the outside and rooms in first story, and $1\frac{1}{4}$ inches thick; all others $1\frac{1}{4}$ inches thick, moulded, with double faces. The main stairs has a 7-inch octagon newel, a $2\frac{1}{4} \times 4$ -inch moulded rail, and 2-inch turned balusters, all of black walnut. The side-walls and ceilings of the two full stories are white-sand finished, on one coat of "laid-off" brown mortar. This is the favorite mode of plastering through the Eastern States, while in the neighborhood of New York two coats of brown mortar are usually applied. Where one-coat work

is properly done, more hair is mixed in the mortar, increasing its strength. The *same quantity* of mortar is used as for two coats. The advantages claimed for the "one-coat work" are, a saving of one-third in labor, and obviating the delay for the additional coat to dry. All the wood-work usually painted, and the chimney-top, have two coats of best American lead and *raw* linseed-oil. For more extended remarks on painting, see article with Design XII.

ESTIMATE of materials required, and total cost.

58 yards excavation, at 20c. per yard.....	\$11.60
26 perches stone-work, complete, at \$2.50.....	65.00
2,000 bricks, furnished and laid, complete, at \$12 per M.....	24.00
360 yards plastering, complete, at 25c.....	90.00
1,694 ft. timber, at \$15 per M.....	25.41
1 sill, 4×7 in. 26 ft. long.	3 ties, 4×6 in. 15 ft. long.
3 sills, 4×7 in. 15 ft. long.	1 plate, 4×6 in. 26 ft. long.
1 sill, 4×7 in. 23 ft. long.	1 plate, 4×6 in. 23 ft. long.
8 posts, 4×7 in. 13 ft. long.	14 beams, 3×7 in., 21 ft. long.
1 girt, 4×6 in. 15 ft. long.	13 beams, 3×7 in. 15 ft. long.
20 ceiling-strips, 1½×5 in. 13 ft. long.	
50 joists, 3×4 in. 13 ft. long, at 16c. each.....	8.00
200 wall-strips, 2×4 in. 13 ft. long, at 13c. each.....	26.00
130 siding-boards, at 23c. each.....	29.90
160 shingling-lath, at 6c. each.....	9.60
40 bunches shingles, at \$1.25.....	50.00
12 spruce plank, at 20c.....	2.40
Materials in cornices, \$14; stoops, complete, \$20.....	34.00
93 flooring, at 18c. each.....	17.10
2 cellar windows, complete, at \$3 each.....	6.00
2 single windows, complete, at \$12 each.....	24.00
3 double windows, complete, at \$15 each.....	45.00
15 doors, complete, at \$9 each.....	135.00
Closet, shelving, and nails.....	20.00
Stairs, \$50; bay-window, complete, \$50.....	100.00
Tin (gutters, valleys, and leaders).....	11.00
2 marble shelves, \$10; painting, \$80; carting, \$15.....	105.00
Carpenter's labor, not included above.....	100.00
Incidentals, sink, pump, etc.....	60.99
Total cost.....	\$1,000.00

DESIGN X.

A HOUSE COSTING \$1,100.

This economical cottage has ample, convenient apartments for a medium-sized family, and is adapted to either a village or a more rural location. A 25×100-foot lot will contain such a house, besides the needed side alley-

way to the rear. Those contemplating the erection of low-priced, tasteful cottages in duplication, either for selling, or by coöperation as in Building Associations,



Fig. 39.—ELEVATION OF FRONT OF HOUSE.

will find this plan suited to their wants.... EXTERIOR, (fig. 39).—The front presents a graceful, trim, outline, with a neat and pleasant arrangement of openings. The

Porch fits in an angle, with its steps projecting beyond the principal building, providing an appropriate entrance to the house. The large Bay-window is the most impos-

ing feature of the front, is expressive of comfort and cheerfulness, and gives a good appearance and character to the whole building. The principal cornices are neatly trussed, and have such "spread" as gives a finished and bold appearance to the roofs. It has such proportions and genteel style, that if near a more formidable or costly residence, it would not disgrace it.

..... CELLAR,
(figure. 40.)—
Hight 7 ft. Its

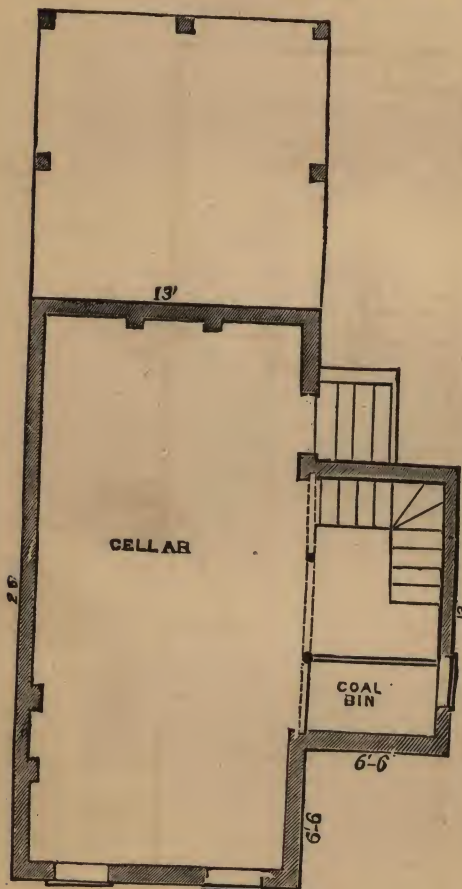


Fig. 40.—PLAN OF CELLAR.

outlines correspond with the ground-plans of the principal building; it is three feet below the general surface of

the ground, and four feet above, and has an outside entrance door, three good sized cellar windows, two of which are in the front, and one at the side, contiguous to the coal-bin. It is accessible from the first story by a plain stairway. If desirable at any time, a pleasant basement room may be finished in the front part, at a small cost.....

FIRST STORY, (fig. 41).—Height of ceilings, $9\frac{1}{2}$ feet. It is divided into three rooms of nearly equal size, with a Hall and two Closets. The Bay-window adds considerable to its area, making it the largest and pleasantest

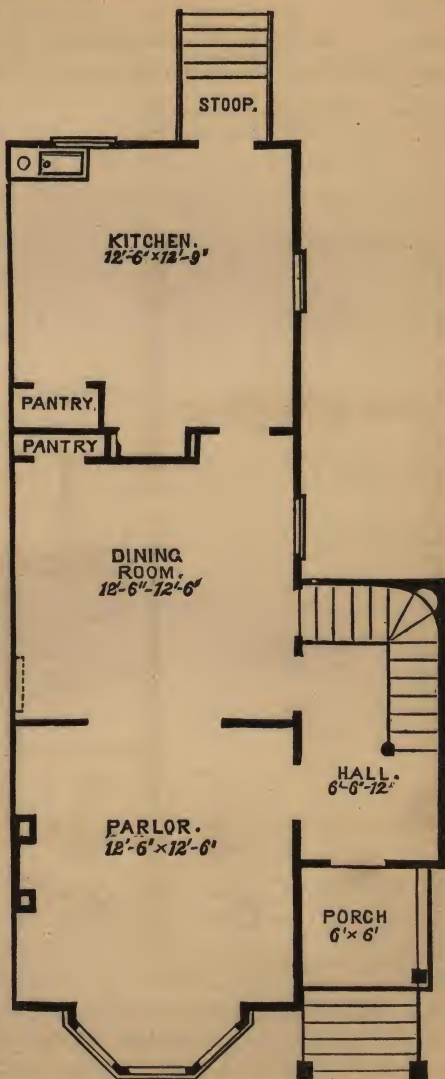


Fig. 41.—PLAN OF FIRST FLOOR.

room. The Dining-room adjoins the parlor, and may be used with it as occasion requires by opening the folding doors. Each of these rooms has neat marble mantles, and opens into the front hall. The Kitchen connects with the dining-room, and is provided with a pantry, pump, sink, two windows, and an outside door leading

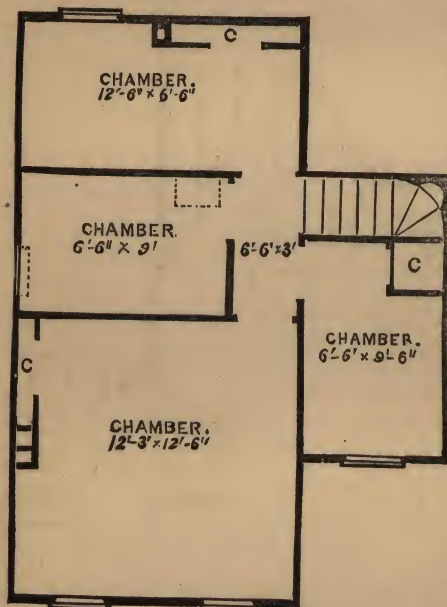


Fig. 42.—PLAN OF SECOND FLOOR.

to the rear yard. When houses are built on single village lots, it is usual to arrange for one "blank" side, as in this plan, but where more ground is allowed, it is desirable that openings should be made for at least one window in each story of this side, as they would add to the cheerfulness of the interior, and give a better appearance to the outside. Two windows are thus indicated by dotted lines, one for the dining-room, and one for the interior chamber, though the latter is lighted from the roof, as noted. It may be advisable even to put two other windows on this side of the house, for the outside general good appearance, or blind-windows may be put in at small expense, for the same purpose.... SECOND STORY, (fig. 42).—Ceilings 8 feet high. The divisions are very simple, making four

rooms, three closets, a stairway, and passage leading to each room. . . . CONSTRUCTION.—Reference is had in this plan to what is known in the trade as “piece-lumber”—the joists, wall-strips, boards, etc., being generally in lengths of 13 feet each. There is great economy in being able to use such standard lumber, without cutting to waste. Figure 43 shows how a neat, cosy cottage-frame may be cheaply constructed almost wholly of such 13-foot materials. But

there is a decided preference for full chamber ceilings, and as the difference in cost would not exceed \$60, it is best to make the house *two full stories high*. The principal frame is of 3-inch timber, with studing of 2×3 inch. This thickness of the frame-work se-

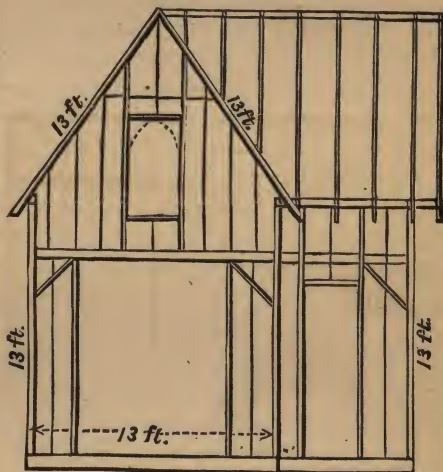


Fig. 43.—MANNER OF FRAMING.

cures some 220 feet more interior space to the rooms, than in the use of 4-inch timber, besides saving one-fourth of its quantity and cost. Ordinary 1 $\frac{1}{4}$ ×10-inch spruce plank are used for the frame-work, for the floors and ceilings. For the beams they are reduced to the depth of eight inches, and the 2-inch strips sawed off are used for shingling-lath. For the ceiling-frame of the second story, they are simply sawed through the middle, leaving each half five inches deep, and are all placed 16 inches apart from centers. One row of cross-bridging is

put through the center of each tier of beams, and the center of the ceiling-strips are secured by hangers from the rafters. The Rafters are 2×4 inches, framed to rest on the principal plates, where they are connected with the ceiling-strips by spikes, preventing any settling or spreading of the roof. The Roof of the main wing is constructed with double pitch, corresponding with that of the main roof. The principal roofs are finished with shingles, and has improved gutters, described in Design V. The porch and bay-window roofs are covered with tin laid on smooth boarding.—The *rake* or *pitch* of roofs has much to do in giving character and finish to buildings. For ordinary roofs, when shingles or slate are used, the rise should be *one-third* the width of the building, as in this case, the rise is $4\frac{1}{3}$ feet, for the width of 13 feet. This pitch is very pleasant to the eye, and easy of construction. In larger buildings, it is often desirable to secure more space or head-room in the attic, when the rise should be *one-half* the width of the building. We would never go *between* these two angles in search of a roof-line that would gratify good taste, or comport with any style, but deviations above one-half or below one-third may be made, as circumstances indicate.—Circular openings covered with blinds, in each gable, give free air circulation between the ceilings and roof. Every dwelling should have some way of readily reaching the roof from the inside to clean the gutters, repair the roof or chimneys, and in case of fire in the house or in the neighborhood. An opening is made in the ceiling of the middle chamber (fig. 42) over and just inside the door, and thence through the roof. This is neatly boarded around its sides, forming a “well,” and is covered at the top with a *sash*, sloping with the roof, hung so as to be easily opened and closed by a cord from the inside. This provides for light, ventilation, and a scuttle in combination. A sash, hung on center pins to revolve,

over the door of this room, transmits light from the skylight to the second-story passage and stairway, and supplies ventilation.... The mason's work is complete and substantial in every part. The foundation walls, piers, and chimneys, are of hard brick and mortar; the plastering is two coats of brown mortar and a hard finish....

HEATING.—Only two fires are required at any time to make the principal rooms of this house comfortable. The parlor, and chamber immediately above it, are warmed through a heater placed in a parlor fire-place. The dining-room has a radiator fitted in the opening of the mantel, and connected by 5-inch pipes through the fire-place back with the kitchen stove.

ESTIMATE of materials and cost :

40 yards excavation, at 20c. per yard.....	\$ 8.00
12,000 brick, furnished and laid, at \$12 per M.....	144.00
32 ft. stone steps and coping, at 20c. per ft.....	6.40
450 yards plastering, at 30c. per yard.....	135.00
1,969 ft. of timber, at \$15 per M.....	29.53
1 sill, 4×8 in. 39 ft. long.	
1 girt, 4×8 in. 13 ft. long.	
1 plate, 3×4 in. 104 ft. long.	
116 studding, 2×3 in. 10 ft. long.	
70 planks for beams and ceilings, at 25c. each.....	17.50
55 rafters, 2×4×13, at 13c. each.....	7.15
208 siding, 10 inch, at 26c. each.....	54.08
100 lbs. tarred felting, at 3c. per lb.	3.00
Materials in cornices, water-table, and corner-boards.....	20.00
165 shingling-lath, at 6c. each.....	9.90
28 bunches shingles, at \$1.50 per bunch.....	42.00
200 ft. gutters, leaders and roofs, at 8c. per ft.....	16.00
96 flooring, at 26c. each.....	24.96
Stairs, complete, \$40; porch and stoops, complete, \$40.....	80.00
Bay-window, complete.....	60.00
8 windows, complete, at \$10 each.....	80.00
3 cellar windows, complete, at \$6 each.....	18.00
15 doors, complete, at \$8 each.....	120.00
Closets and shelving, \$8; mantels, \$30.....	33.00
Pump and sink, \$18; nails, \$15.....	33.00
Painting, \$60; cartage, \$13.48.....	73.48
Carpenter's labor, not included above.....	80.00
Total cost, complete.....	\$1,100.00

DESIGN XI.



Fig. 44.—FRONT ELEVATION OF HOUSE.

A HOUSE COSTING \$1,600.

This plan is for a comfortable and genteel dwelling, suited to almost any location, and for the accommodation of an averaged-sized family. Upwards of twenty years' experience in planning and building has taught me that it is not difficult to design either as to Style, Room,

or Cost, when the owners have means sufficient to gratify their individual tastes, and no special care is required to save expense. But it is quite another matter to provide plans for the great mass of people who, through habit or necessity, put everything to the test of economy, and to whom every inch of room, or foot of material, is an important consideration. In designing and projecting such work, theories avail little; practical experience must then be the chief guide... Conventional modes of living have established a system of household arrangement and economy requiring for every home of

even moderate refinement, a house with a front hall, a parlor, a dining-room, and a kitchen on the first floor,

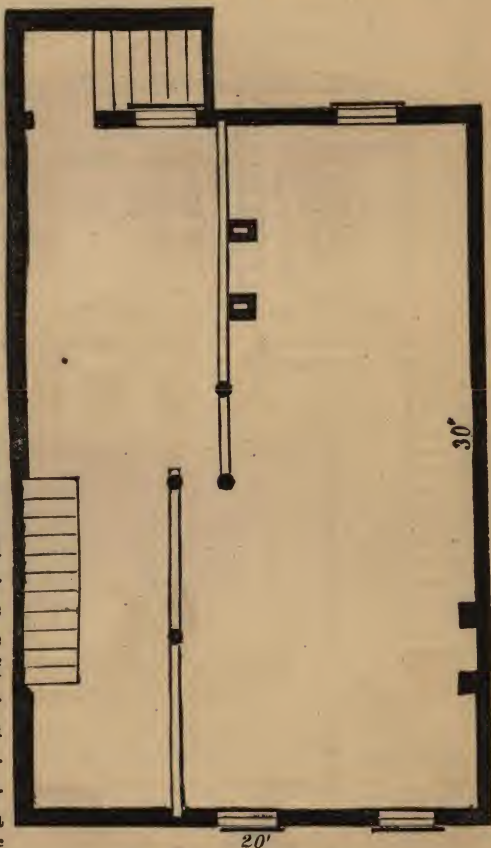


Fig. 45.—PLAN OF CELLAR

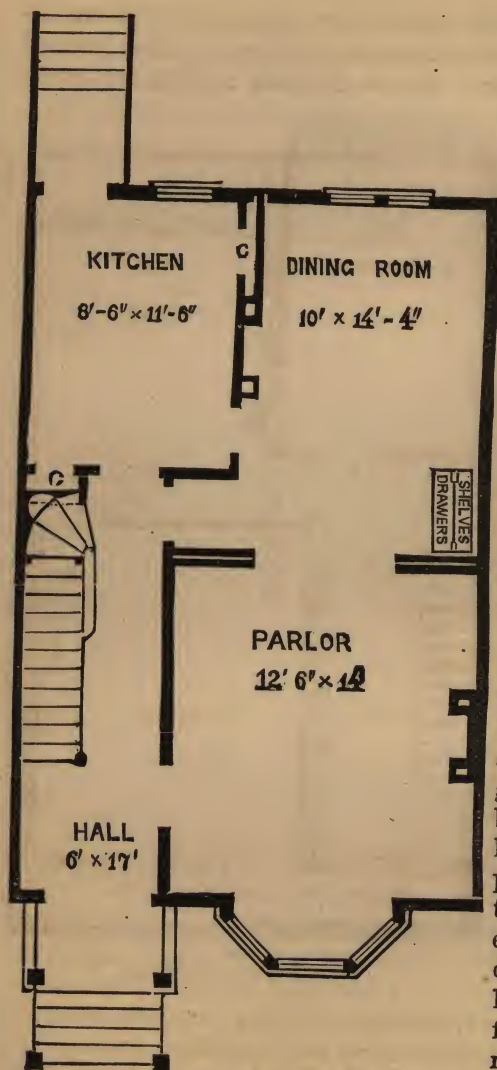


Fig. 46.—PLAN OF FIRST STORY.

and a liberal suite of chambers in a second story. Our plan herewith, though only 20 by 30 feet, provides for all the above. If built on an ordinary 25-foot village lot, it will allow a needed passage-way on one side. In rapidly filling up, crowded localities, four persons owning single lots, making a frontage of 100 feet, can arrange together and build five houses on this plan for about the cost of erecting four detached houses. The fifth house may be rented or sold for the

benefit of the four owners. In such cases, a hall should be finished in the basement, with an entrance in front similar to the one shown in the rear in fig. 45.... The FRONT ELEVATION is made up of simple parts, in a neat arrangement.

The Bay-window indicates refinement, and adds largely to the area or room of the parlor.

....The CELLAR walls are of hard brick, are 8 inches thick, 7 feet high, and show at least 3 feet above ground. For health's sake alone, as well as for a better appearance, and for convenience, if the basement should ever be desired finished off in rooms, which can be done at any time with little expense, it is best to always place the first floor well up from the ground. In very cold localities, frost can be kept out of the basement by banking up in winter, or better by laying the brick walls with an opening up through the center, extending bricks across the opening

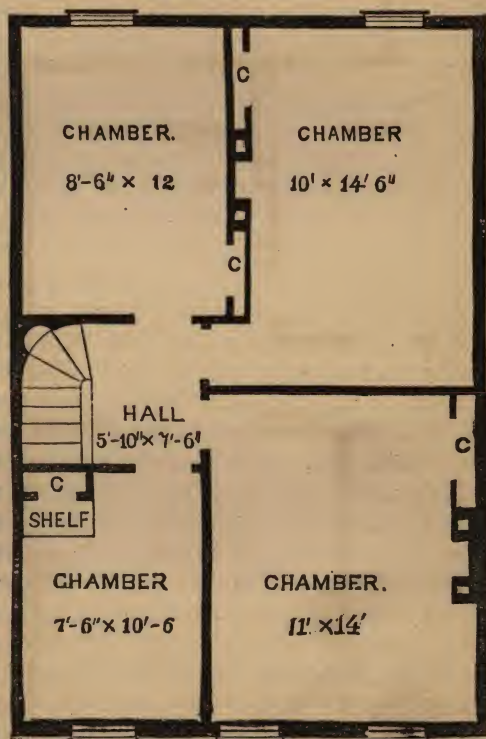


Fig. 47.—PLAN OF SECOND STORY.

finished off in rooms, which can be done at any time with little expense, it is best to always place the first floor well up from the ground. In very cold localities, frost can be kept out of the basement by banking up in winter, or better by laying the brick walls with an opening up through the center, extending bricks across the opening

at frequent intervals to secure firmness. This central air-chamber promotes health, warmth, and dryness in the basement or cellar. One foot of the soil taken from the excavation for the cellar should be used in grading around the house, to secure the flow of water *away* from it, and still leave the walls three feet or more above the ground.... FIRST STORY, (fig. 46).—Height of ceiling, $9\frac{1}{2}$ feet. The divisions embrace three rooms, a hall, and two closets. Double doors are provided for the front entrance, and between the parlor and dining-room, and marble mantles and shelves in the principal rooms. A movable "Dresser" having drawers and shelving with small doors, is indicated for the dining-room. This room may be heated by leading a pipe from the kitchen stove to a drum and back into the chimney, or up through the chamber above to warm that somewhat. A "Fireplace heater" in the parlor will warm the chamber above.... SECOND STORY, (fig. 47).—The height of the ceilings are $8\frac{1}{2}$ feet. There are four chambers, with closets to each, and a small hall. The head-room over the main stairs extends beneath the closet to the inner edge of the shelf shown—the floor in these parts being angled to suit the pitch of the stairs.... REMARKS on construction.—An end section of the "Novelty siding" is shown in fig. 48. This is of 10-inch boards, 1 inch thick, cut as shown in the engraving. The groove in the center gives it the appearance of narrow clapboards; the lap of about an inch closes tightly, and the thick boards not only add to the warmth, but also to the strength. A house covered with this will vibrate very little in the most windy situations, and be firmer than one covered with thin siding having much heavier timber. Where planing mills are accessible, it is little more expensive than the dressed half-inch boarding, and the appearance is quite as pretty. In this vicinity it is customary to



Fig. 48.—"NOVELTY SIDING."

purchase a lot of pretty good quality merchantable pine boards, select the best and clearest of knots for siding, and use the rest for flooring where knots are not objectionable when to be covered with carpeting. The smaller and firm knots in the siding used, are readily covered with paint, if first primed with a little solution of shellac in alcohol. A section of the wall is shown in fig. 49. The studding, 2×4 , makes a space of four inches between the siding and plastering. Tarred paper, or what is termed roofing-felt, is procured in rolls 32 inches wide. A saw run through the roll cuts it into 16-inch strips. The studs being set 16 inches apart from center to center, leaves the clear space of 14 inches. The strips of felt are turned up an inch on each

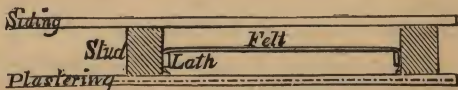


Fig. 49.—SECTION OF OUTSIDE WALL.

edge, and these turned edges are held against the studs by lath firmly up and down, so as to hold the sheets midway between the plastering and siding. This leaves *two* air-chambers, both good non-conductors of heat. Mice or insects will not eat or go through this material. It is impervious to currents of air, and the whole is as warm as if filled in with brick. The cost is very small, and, as will be readily seen, it is much warmer than when the felt is put on directly under the boards, leaving only one air-chamber, and that a wide one. . . . In all house-plans, we advise putting in all the closets possible; they are always convenient, even a foot square "cubby-hole" in the side of a chimney is a handy place. In planning a house, after making the size as large as one's means will allow, the "better half" should be consulted as to the advisability of making this or that room a little smaller by cutting off a few inches here and there to enlarge a pantry or closet. . . . We always advise to put in an extra bell or two, and one or more speaking-tubes, to connect the upper

and lower rooms. The cost is but trifling, if they are put in when building. A hundred feet of speaking-tube will cost but \$2 or \$3; the carpenter can insert it behind the lath, running it from one room to another in a few minutes, and it will save many steps, and much calling through the halls, especially when the mother happens to be an invalid, and restrained to a chamber . . . In arranging sink, table, dish-pantry, etc., with reference to dining-room and kitchen, always plan to save steps. A distance of 10 feet extra, traveled over each way, say 20 times a day, in handling food and dishes, amounts to 28 miles extra walking every year, all of which may be saved by a slight change in arrangement. These are small matters, but these have much to do in making a "convenient house."

COST.—The following **ESTIMATES** of cost in detail will give an idea of the general character of the work. The prices given are for materials in the vicinity of New York. Carpenters wages are reckoned at \$2 per day; mason's work, \$2.50 per day; and painters, \$3 per day:

Excavation, 2½ ft. deep, at 20c. per yard.....	\$11.00
12,000 hard brick, furnished and laid, at \$12 per M.....	144.00
28 ft. stone steps, at 40c. per ft.....	11.20
16 ft. stone sills, at 30c. per ft.....	4.80
433 yards lath and plastering, at 30c.....	144.90
2,000 ft. timber, at \$15 per M.....	30.00
2 sills, 4×7 in. 20 ft. long.	2 ties, 4×6 in. 26 ft. long.
2 sills, 4×7 in. 30 ft. long.	2 ties, 4×6 in. 30 ft. long.
4 posts, 4×7 in. 20 ft. long.	2 girders, 4×8 in. 15 ft. long.
2 plates, 4×6 in. 20 ft. long.	2 stringers, 3×8 in. 20 ft. long.
2 plates, 4×6 in. 30 ft. long.	30 beams, 3×8 in. 20 ft. long.
32 rafters, 3×4 in. 12 feet long, at 18c.....	5 76
300 wall-strips, 2×4 in. 13 ft. long, at 11c.....	33.00
200 novelty siding-boards, 9½ in., at 30c.....	60.00
160 lbs. tarred paper, at 5c.....	8.00
100 hemlock boards, 10 in., at 18c.....	18.00
100 ft. main cornice, at 40c.....	40.00
1 bay-window, complete, with blinds, labor included.....	60.00
1½ stoops, complete, labor included.....	70.00
8 windows with blinds, at \$16.....	128.00
4 windows, with blinds, at \$8.....	32.00
8½ squares of tin roofing, at \$7.....	59.50
100 ft. gutters and leaders, at 10c.....	10.00
150 flooring-plank, tongued and grooved, at 28c.....	42.00
Stairs, main and cellar, \$60; base-boards, shelving, etc., \$30.....	90.00
4 mantels (1 full marble, and 3 marble shelves on trusses of plaster).	50.00
21 doors, complete, labor included, \$158; 350 lbs. nails, at 5c., \$17.50..	175.50
Painting, two coats.....	80.00
Carpenter's labor, not included in windows, doors, and porches, about \$200.00; cartage, average one mile, \$30 00.....	230.00
Allow for extras, cistern, pump, sink, etc., etc.....	62.34
Total.....	\$1,600.00

Prices vary in different localities, somewhat, but when higher in some particulars, they will generally be lower in others, so that the whole cost will not be greatly different over a considerable extent of country. There are many items that can be cut down in the above estimate, where great economy is needful. For example, substitute wood for stone steps and sills; omit the blinds and bay-windows, use cheaper doors, pine-stair railing and newel, instead of walnut, etc. Our estimate is for a pretty, complete, tasteful house.

DESIGN XII.

A HOUSE COSTING \$1,700.

The plans here given are similar in many respects to Design XI., and are somewhat larger, but can be built for very nearly the same cost.... ELEVATION, (fig. 50).—The front is irregular, having an angle, which narrows the parts, supplies more vertical lines, and adds to their length comparatively. These are important features, imparting a graceful appearance, and influencing the entire character of the house..... The angle affords ample room for the piazza, which can be built for much less cost than when its three sides are exposed. The next attractive features of the front are the bay-windows below, and double windows above, with the balustrade and hood so proportioned and arranged that they conform with each other with pleasing effect..... CELLAR, (fig. 51).—The Foundation Walls are of hard brick laid in mortar, 8 inches thick, and 7 feet high. In localities where the foundation rests on loose sand, care should be taken to provide a bedding, laid 4 inches below the cel-

lar bottom, 16 inches wide, of brick, or better, of large flat stones. Still greater care should be bestowed on the



Fig. 50.—ELEVATION OF FRONT.

bedding for the chimneys and girder supports, for they sustain the greatest proportionate weight, and any settlement of these parts will cause a depression of the floors,

disarranging the whole house, and become an immediate and continuous source of anxiety and expense. The Area in the rear is built of hard brick and mortar, with blue-stone steps and coping. Blue-stone sills are provided for each of the cellar windows.... FIRST STORY, (fig. 52).—

The interior arrangement of the plan will be appreciated as making the best possible use of the room. The Front Hall is wider than is usual in houses of this character. The Stairs are arranged with the "quarter circle" about midway of their height, which brings the niche down where it becomes an important feature of the hall. The three principal rooms, the parlor, dining-

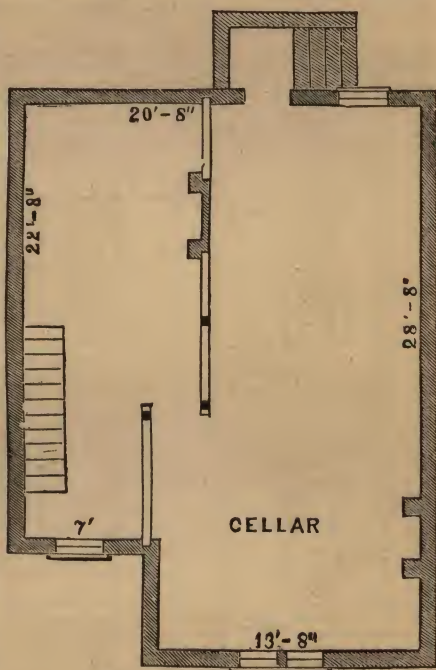


Fig. 51.—PLAN OF CELLAR.

room, and kitchen, can be entered from the hall. The latter two rooms have doors leading to the lobby. The Lobby is built of $4\frac{1}{2}$ -inch tongued and grooved ceiling-boards, with sashes made to swing. A Shelf, $1\frac{1}{2}$ feet high, and another just above the sash, give sufficient frame-work to fasten the center of the boarding; the ends are nailed to the sill and plate; these shelves will

be found useful for many purposes. Attached to the lobby, and built with it, is a good-sized Pantry (*P*), for the dining-room. The Kitchen is provided with a closet at the side of the chimney, a sink, with small closet underneath, and a direct communication to the cellar stairs under the hall stairs.

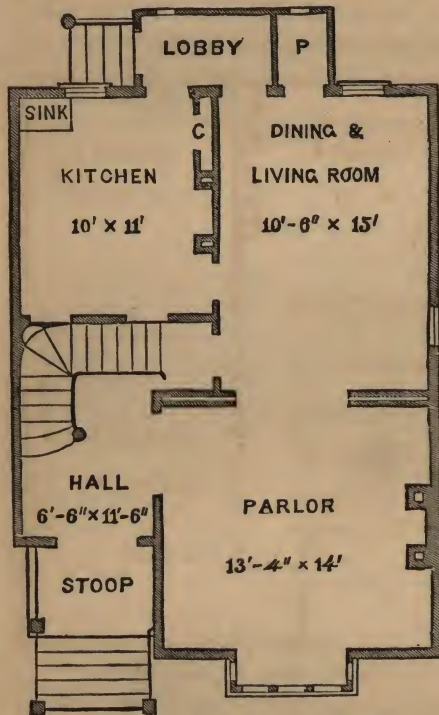


Fig. 52.—PLAN OF FIRST FLOOR

The window in the side of the dining-room may be omitted, if the house is in a village and joins another, but this is desirable to give abundant light in this, which is really the living-room of the family.—The method of heating indicated in Design XI. are applicable to this plan... SECOND STORY, (fig. 53.)—The pecu-

liar manner of constructing the Stairs brings their landing nearly in the center, so that hall space sufficient only for four doors is necessary, leaving almost the entire floor to be laid off into rooms. The heavy lines show the most simple method of dividing this story into four rooms. Should another room be desirable, it can be taken off from two rooms, as shown by the dotted lines. In this

case, another window may be inserted as indicated. Every one's experience will suggest that there can not be too many closets, and we have added one to every room in the house, except the parlor.... CONSTRUCTION.—The bill of timber appended indicates a “regular” *Frame*. It is a great satisfaction and saving to have the timber properly “laid out,” and framed by, and under the immediate direction of a master mechanic, so as to be quickly and substantially raised. Four good carpenters would easily frame all the timber in this house in two days, and raise it the next day. At least one man of well-known ability and experience as a mechanic should be with

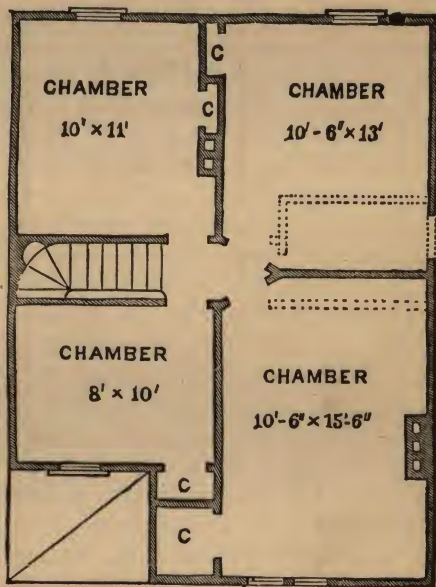


Fig. 53.—PLAN OF SECOND FLOOR.

and take charge of those employed to build a house. It is not economical for one about to build a *home* to trust such work to the caprice of an inexperienced man, who has “helped” around some job, until he has learned the name of tools, but who has no positive knowledge of the trade, and could not for his life “lay out” the corner-post for a two-story house, yet is shrewd enough to screen his deficiencies by suggesting “balloon,” or something indefinite, that requires little or no skill. It sometimes

happens, in localities remote from large cities or large towns, that persons are obliged to do with make-shifts, to get a home at all. It was such a condition of things that led the well-disposed pioneer of the West to adopt the method called "Balloon framing," which is really no framing at all, and required no skill to get up a kind of home acceptable under such circumstances. But wherever skilled labor may be had, it is ridiculous to see a gang of intelligent (?) mechanics standing up pieces of diverse lengths, and propping them in a vertical position with rods running every way as braces, not one of which can be removed until the upper ends are secured by ties of some sort. A good frame in a house is equivalent to a good constitution in a man, and is of vital importance; it need not be clumsy or overloaded, but should at least have the merit of being able to stand alone. . . . PAINTING.—The principal object in Painting should be to protect and preserve the materials used in construction, as also to give a good appearance. All exterior wood-work, though executed with the greatest care and in the most substantial manner, if left exposed to climatic influences, is very soon destroyed. It is economy to use only the *best lead* and *linseed-oil* in painting exterior wood-work. They will outlast all other compounds, present a better appearance, and in the end furnish a much better foundation for future painting. The difference in cost between the best materials and the imitations, for painting the exterior of a house built on these plans, would not exceed \$12, and the cost of labor would be just the same in either case. The first coat or "priming," should be put on with the greatest care, so as to thoroughly cover and close all the pores in the exposed surface. All window and outside door frames, corner-boards, window-caps, water-table, and stoop-flooring, should be primed *before* setting, especially their edges, where joinings require to be made, as it will be the last opportunity to do justice

to these parts, where moisture is liable to collect and remain. When priming is well done, it is best to let the building stand until thoroughly dried, both inside and out, before adding the second coat. It must be evident to any one that much of the water used in the plastering must percolate through, and thoroughly saturate every part of a house. Sufficient time should be allowed for this moisture to pass off, and the whole house to become dried out. . . . The nails should then be "set," which will tighten up permanently all the laps in the siding, after which the work should be properly puttied, and the second coat applied. Autumn is the best season to paint, after the extreme heat has passed, and insects have disappeared; the process of drying will be slower and more perfect, with less waste by evaporation, leaving a smooth, solid surface. I am often asked "*what color to paint?*" Notwithstanding much has been said against white for outside painting, and realizing that there are many cases where white would not be suitable, or thought of, yet I believe that for suitability and good taste, in nine cases out of ten, very light colors, or pure white, are indicated. I have known instances where much time has been spent to discover a suitable color for a house, where nearly all the different pigments were drawn from, and after much mixing and testing, the result has generally been an unknown and unnamed shade, as if everything depended on some sentimental "blending with the background," or in other words, painting the house out of sight. As a rule, paint so as to best reveal the true character of the building, and this is best done when the colors afford the foundation for the natural shadows that result from the true and actual projections. For the body and trimmings are suggested a light "Dorchester" gray; roofs, graphite-black; sash, coach-black; blinds, "chocolate."

COST.—The following items, prepared with care, embrace the full bill of materials and labor required in the

construction of this house, together with their present cost in the vicinity of New York :

57 yards excavation, at 20c. per yard.....	\$11.40
13,000 brick, furnished and laid, at \$12 per M.....	156.00
500 yards lath and plastering, at 30c. per yard.....	150.00
28 ft. stone steps and coping, at 40c. per ft.....	11.20
16 ft. stone sills, at 30c. per ft.....	4.80
2,370 feet of timber, at \$15 per M.....	35.55
2 sills, 4×7 in. 30 ft. long.	6 posts, 4×7 in. 20 ft. long.
2 sills, 4×7 in. 22 ft. long.	2 ties, 4×6 in. 30 ft. long.
1 girt, 4×8 in. 16 ft. long.	2 ties, 4×6 in. 22 ft. long.
1 girt, 4×8 in. 8 ft. long.	2 plates, 4×6 in. 30 ft. long.
26 beams, 3×7 in. 22 ft. long.	2 plates, 4×6 in. 22 ft. long.
6 beams, 3×7 in. 15 ft. long.	6 pieces, 3×7 in. 16 ft. long.
400 wall-strips, 2×4 in. 13 ft. long, at 11c. each.....	44.00
200 novelty siding-boards, $\frac{3}{4}$ in., at 30c. each.....	60.00
160 lbs. tarred paper, at 5c. per lb.....	8.00
128 tongued and grooved flooring, $9\frac{1}{4}$ in., at 35c. each.....	44.80
110 hemlock boards, at 18c. each.....	19.80
$9\frac{1}{4}$ squares of tin roofing, at \$7 per square.....	66.50
120 ft. cornice, at 30c. per ft.....	36.00
111 ft. gutter and leader, at 10c. per ft.....	11.10
1 bay-window, with blinds, complete.....	60.00
Materials in stoop, lobby, balcony, hood, and corner-boards.....	73.00
8 windows, with blinds, complete, at \$16 each.....	128.00
4 cellar windows, complete, at \$4 each.....	16.00
24 doors, complete, at \$8 each.....	192.00
2 stairs, complete.....	60.00
2 marble mantels and 4 pine mantels.....	75.00
Base-boards and shelving.....	25.00
Nails, sink, and pump.....	34.00
Cartage, average one mile.....	30.00
Carpenter's labor (not included above).....	200.00
Painting, two coats.....	80.00
Extra for girder supports, grading, etc.....	62.85
Total cost of materials and construction.....	\$1,700.00

DESIGN XIII.

FRENCH-ROOFED COTTAGE, COSTING \$2,000.

These plans were designed for a genteel cottage adapted to thickly-settled localities, where the increased value of lands make it necessary to reduce the area, and build upwards. Several houses constructed from these plans in this vicinity are admired for their convenient accommodation and cheerfulness..... EXTERIOR, (fig. 54.)—The Foundation extends four feet above ground, giving a desirable altitude to the whole building. The front is enlivened by the numerous window and door openings, the

several projections of piazza, dormers, and cornices, and the variety of the materials used. The dressing of the several parts are of simple designs. The projections of cornices, etc., should always be self-sustaining, yet while this is true, there is sure to be a fancied necessity for some apparent support obvious from the outside. Such supports require special treatment, with a view to their proper form and proportion, and should be sparingly applied, giving to each one its distinct place and purpose. Brackets of neat pattern are often crowded so closely together as to cheapen and destroy their beauty, and overload the cornice, thus reversing their legitimate purpose as supports. . . . CELIAR, fig. 55.)—Height of ceiling 7 feet; it extends under the main house only. Its height above the ground gives an opportunity for good-sized window openings. If desired at any time, an airy and light work-room or laundry can be made by dividing and flooring a part of this story at



Fig. 54.—ELEVATION OF FRONT OF HOUSE.

little cost.... FIRST STORY, (fig. 56).—Hight of ceiling 10 feet. It has a hall running through the whole length of the main house, with entrances from both front and

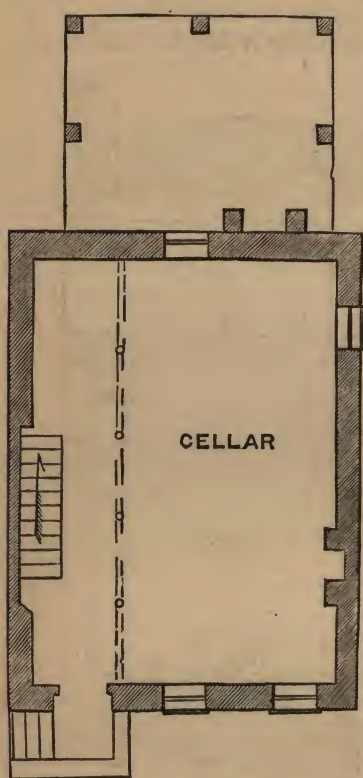


Fig. 55.—PLAN OF CELLAR.

rear. The parlor, dining-room, and kitchen, are all good-sized apartments, and pleasantly arranged. Double folding doors are provided for the front entrances and from the hall to the parlor, and sliding doors between the parlor and dining-room. A bay-window adds materially to the size and pleasantness of the dining or living-room. Each room has an open fire-place; the kitchen has a pump and sink, with the usual supply and waste-pipe connections. The rear stoop is roofed, and has a portable enclosure of light ceiling boards, to be used in severe weather.... SECOND STORY, (fig. 57.)—Hight of

ceiling $8\frac{1}{2}$ feet. The divisions of this story are simple—giving a hall, two large chambers, with passage between, two hall rooms, and two closets.... CONSTRUCTION.—The estimate given provides for foundation of broken stone, laid and neatly pointed with good mortar; the stone exposed to sight on the outside to be “semi-dressed.”

Blue-stone, or other suitable stone obtained most readily, are used for the sills of cellar windows, for the steps, and wall coping of the cellar entrance.

The principal timber is of seasoned spruce or pine, thoroughly framed, raised, and secured. The "framing-in" of braces is too frequently omitted—cutting them "barefoot," and spiking, being substituted. The latter does very well where the frame is strongly sheathed over, and the outer siding applied afterwards. The sheathing aids largely in stiffening the frame, but should not be relied on to the exclusion of the necessary braces to square up the frame, and prevent the swaying which often happens unobserved, to be discovered when too late to remedy it. Laxity in the matter of bracing has led to frequent errors as to their

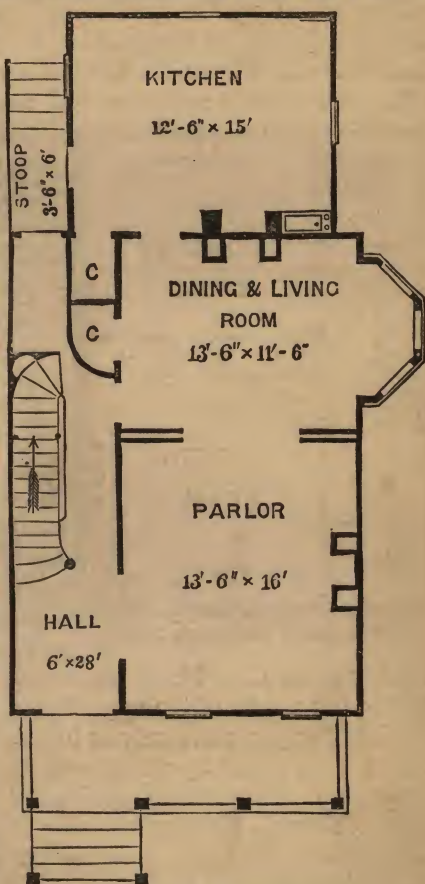


Fig. 56.—PLAN OF FIRST FLOOR.

proper place in the frame. When framed in they are invariably placed in the *upper angles* under the ties and plates, adjoining the posts, and when barefoot they should be put in the same angles; never, as is frequently done for convenience, in the lower angles, nor on the sills. A moment's reflection will convince any one that

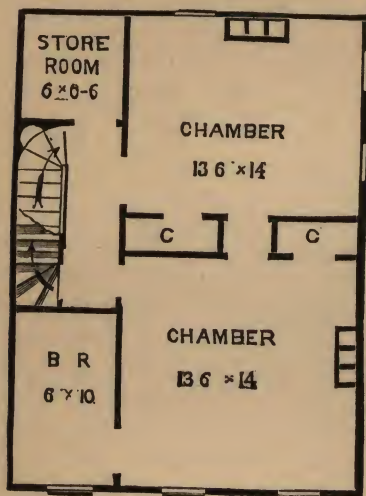


Fig. 57.—PLAN OF SECOND FLOOR.

if the right angles along the principal frame are rigidly maintained, displacements will never occur, except, as rarely happens, the whole is bodily raised from the foundation by a hurricane. The most reliable angles are those formed by the tie and post connections, because at these points the posts are tenoned and mortised together, and secured with hard wood pins. Those least reliable are at the foot of the posts,

adjoining the sills, where their connections are secured only by the weight of the upper frame. Braces placed in the latter angles serve only as fulcrums to endanger the frames when tested by ordinary winds; but if the former or *upper angles* are made positive, by having substantial braces in them, the severest gales may be defied. The siding is of narrow, clear pine clapboards, laid on "thickened" sheathing. The Mansard part of the main roof is covered by 8x16-inch slate—the piazza, bay-window, kitchen, stoop, cornices, window, and deck roof with I. C. charcoal tin—all laid on hemlock boards. Tarred felting is spread under all siding and slate. The first

and second stories are fully completed inside; the attic is floored, but otherwise unfinished, but may be divided at any time into rooms as shown for the second story (fig. 57). The interior plastering is three-coat work, on seasoned lath. All sash are four lights, and hung to balance-weights. Blinds are properly hung (outside) to each window. All wood, tin, and brick-work, usually painted, has two coats of best lead and oil-paint, with stainers to suit the owner's taste. The choice of colors for the exterior is frequently canvassed during the construction of these buildings; often some person of *taste* (?) decides by "warming"—adding red and yellow, until, by the preponderance of these stainers, the most sombre and dismal colors are produced. The most appropriate and pleasing shade for the body of this class of house is a *light gray*; for the trimmings, *dark gray*; for the sash, *burnt sienna*; for the blinds, *chocolate*. The tin roofing should match the *slate* in color. Red colors should be sparingly used, or omitted altogether.

ESTIMATE of materials required, and total cost :

50 yards excavation, at 25c. per yard.....			\$12.50
975 ft. of stone foundation, at 8c. per ft.....			78.00
45 ft. blue-stone sills, steps, and coping, at 30c. per ft.....			13.50
4,000 bricks, furnished and laid, at \$12 per M.....			48.00
480 yards plastering, at 30c. per yard.....			144.00
Cornices and centers, stucco.....			30.00
4,000 ft. of timber, at \$15 per M.....			60.00
2 sills, 4×8 in. 29 ft. l'ng	6 ties, 4×6 in. 21 ft. long	2 decks, 3×8 in. 18 ft. long	
2 sills, 4×8 in. 21 ft. l'ng	2 plates, 4×6 in. 13 ft. long	2 decks, 3×8 in. 26 ft. long	
1 sill, 4×8 in. 16 ft. long	1 plate, 4×6 in. 16 ft. long	1 cross-tie, 3×8 in. 18 ft. l'ng	
2 sills, 4×8 in. 13 ft. l'ng	2 posts, 4×6 in. 13 ft. long	4 hips, 3×7 in. 14 ft. long	
1 girt, 4×8 in. 29 ft. l'ng	30 beams, 3×8 in. 21 ft. l'ng	2 piazzas, 3×7 in. 19 ft. long	
6 posts, 4×7 in. 22 ft. l'g	15 beams, 3×7 in. 21 ft. l'ng	2 piazzas, 3×7 in. 18 ft. long	
6 ties, 4×6 in. 29 ft. long	7 beams, 3×8 in. 16 ft. l'ng		
325 wall-strips, at 12c. each, \$39; 75 joists, at 16c. each, \$12.....			51.00
210 hemlock boards, at 12c. each, \$25.20; cornice materials, \$60.....			85.20
215 sheathing, at 16c. each, \$34.40; 560 pine siding, at 12c. each, \$67.20.			101.60
8 squares slate, at \$8.50 per square.....			68.00
13 squares tin, at \$7.50 per square.....			97.50
65 ft. leaders, at 10c. per ft., \$6.50; 260 flooring, at 18c. each, \$46.80...			53.30
Piazza and stoop, complete, \$80 and \$28.....			108.00
4 cellar windows, complete, at \$4 each.....			16.00
5 plain windows, complete, at \$12 each.....			60.00
6 plain windows, complete, at \$10 each, \$60; 1 bay window, \$60.....			120.00
5 dormer windows, complete, at \$16 each.....			80.00
13 doors, complete, at \$10 each.....			130.00
1 area door, \$5; stairs, \$90; closets, pump, and sink, \$50.....			145.00
Mantle, \$52; tarred felting, \$10.....			62.00
Carpenter's labor, not included above.....			135.00
Carting, average 1 mile, \$30; painting, \$130; incidentals, \$141.40..			301.40
Total cost, complete.....			\$2,000.00

DESIGN XIV.

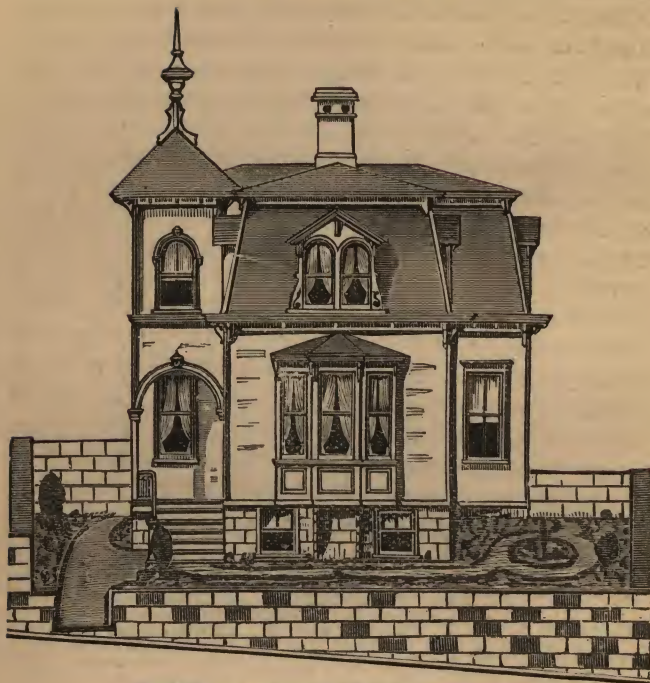


Fig. 58.—ELEVATION OF FRONT OF HOUSE.

A FRENCH-ROOFED COTTAGE COSTING \$2,000.

These plans were designed for a cottage recently built by Mr. W. W. Billings, in New London, Conn. These sketches embrace also the outlines of the grounds immediately surrounding. The site faces a street having steep grades, conforming to the general declivity upon which a large part of the city is built. The grounds are raised above the sidewalk, and leveled in front, and are faced with stonework from $2\frac{1}{2}$ feet high at left, to 6 feet high at the right. The rear grounds are 6 feet higher than those in front. The step *A*, at the entrance (see fig. 59),

is 8 inches above the sidewalk. *B* is the bottom of the cellar, 2 feet 2 inches higher than *A*, and is solid rock. The walk leading from *A* to the rear ascends $1\frac{1}{4}$ inch to the foot; the banks at either side are terraced, and have stone steps inserted in them leading to the flagging at the foot of the

porch steps, and also to the area, or cellar entrance.... ELEVATION, (fig. 58.) — The French roof style is well adapted to this situation on account of its rounded and solid appearance. The irregularities of outline secure agreeable features of variety

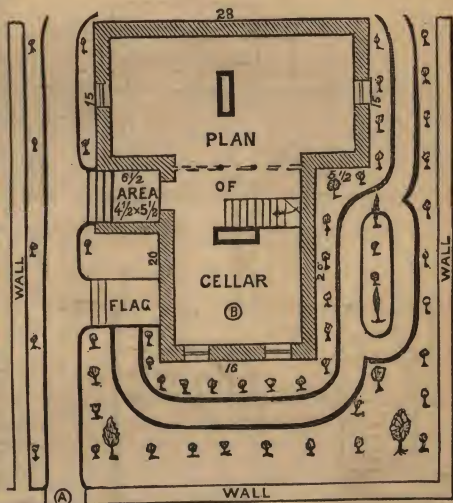


Fig. 59.—PLAN OF CELLAR AND GROUNDS.

and picturesqueness. The Foundation shows 4 feet above ground in front, and 1 foot in the rear. The Porch is in an angle, and the second story extending over it is carried up vertically past the slated part of the main roof, forming a tower-like corner. This corner is largely supported by a single column, and to make it as light as possible, slating of this portion is omitted.—(*As usually laid, slate weighs 500 lbs. ; tin, 50 lbs. per square.*).... CELLAR, (fig. 59.)—Height is $6\frac{1}{2}$ feet. Four windows are placed where they give light to every part. An outside door opens to the area, the latter being covered by the front porch. The front portion of this cellar can

easily be finished off for a work-room or summer kitchen. FIRST STORY, (fig. 60.)—Hight of ceiling 10 feet. The arrangements are convenient, comprising a hall, parlor, dining-room, and kitchen. The main entrance leads from the right of the porch, and the hall runs

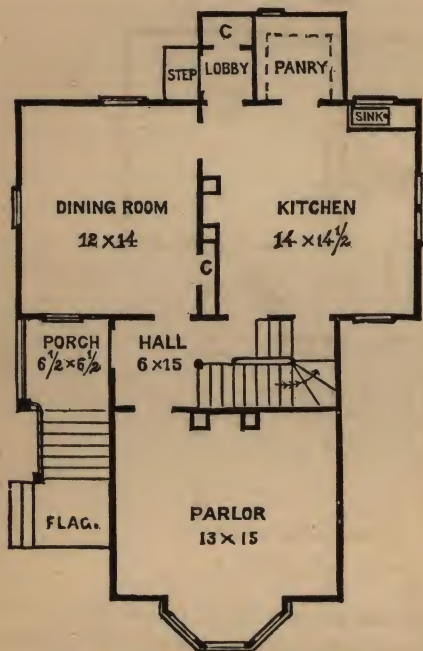


Fig. 60.—PLAN OF FIRST FLOOR.

parallel with the front. Many persons prefer the entrance arranged in this way, as the contents of the hall are not exposed to the street whenever the doors are opened or left ajar. A partition crosses the hall under the platform, adjoining the cylinder, forming a rear passage leading from the kitchen to the cellar stairs. The Parlor has a large bay - window in

front, with a marble mantle directly opposite. The Dining-Room and Kitchen each have windows giving views in three directions. The small wing at the rear contains a good-sized pantry, closet, and the rear entrance or lobby. SECOND STORY, (fig. 61.)—Hight of ceiling 9 feet. The divisions include a hall, three large chambers, a bedroom, and three closets. All parts are well lighted. Ventilating Registers are placed in the center

of each chamber ceiling. The space above this ceiling under the tin roof is ventilated through 8-inch pipes inserted in opposite sides of the roof. These pipes have funnel-shaped covers, elevated two inches above the upper end of the pipes. . . . CONSTRUCTION.—The Foundation

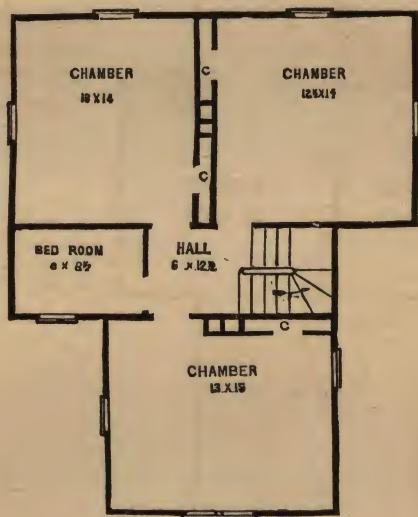


Fig. 61.—PLAN OF SECOND FLOOR.

Walls are of semi-dressed stone. The Chimneys are of hard brick, the cellar portions are constructed with a hollow space or ash-pit, arranged to receive the ashes from the fires of the first story. The siding is beveled clap-boards, laid on sheathing felt. The mansard parts of the main roof are covered with 8x16-inch Keystone slate laid on felt. All other roofs are of IC. charcoal tin, all laid on seasoned boards. The two full stories are hard finished upon two coats of brown mortar. All parts usually painted have two coats of paint, of material and shades to suit the owner. For suggestions on selecting

colors or shades see Design XIII.—ESTIMATE cost of materials and labor :

46 yards excavation, at 20c. per yard.....	\$9.20
1,300 ft. stone foundation, at 15c. per ft.....	195.00
40 ft. blue-stone, at 25c. per ft.....	10.00
5,000 bricks in chimney, at \$12 per M.....	60.00
700 yards plastering, at 30c. per yard.....	210.00
3,650 ft. timber, at \$15 per M.....	54.75
100 joists, at 14c.. \$14; 400 wall-strips, at 1c., \$44.....	58.00
1,660 ft. siding, at 2½c. per ft.....	45.65
Cornice materials, \$70; felt, \$10.....	80.00
220 rough boards, at 15c. each.....	33.00
9 squares slate, at \$9 per square.....	81.00
13 squares tin, at \$7.50.....	97.50
194 spruce flooring, at 20c. each.....	38.80
14 pine flooring, at 25c. each.....	3.50
4 cellar windows, complete, at \$3 each.....	12.00
8 plain windows, complete, at \$12 each.....	96.00
1 bay window, complete.....	50.00
7 dormer windows, at \$14.....	98.00
Porch, finished, \$22; mantles, \$50.....	72.00
Stairs, \$65; nails, sink, and ventilator, \$32.....	97.00
Closet, finished, \$13; painting, \$150.....	163.00
18 doors, complete, at \$9 each.....	162.00
Carting, \$25; labor, not included above, \$225.....	250.00
Incidentals.....	23.60
Total cost, complete.....	\$2,000.00

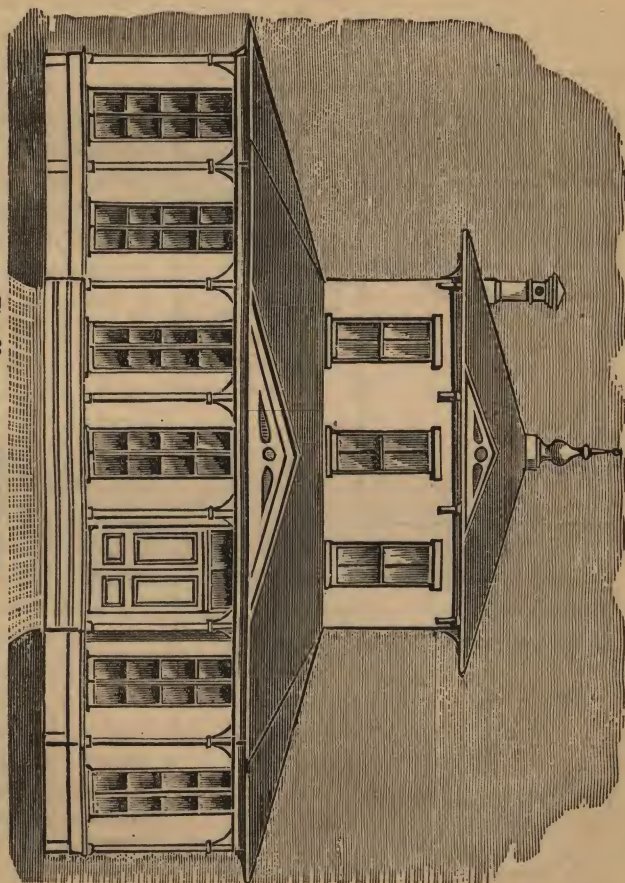
DESIGN XV.

A SOUTHERN HOUSE COSTING \$2,000.

These plans, designed for a Georgia residence, will be adapted to the requirements of others desiring to build an inexpensive rural home in any of the Southern States. EXTERIOR, (fig. 62.)—The plan indicates that the proprietor is not circumscribed by want of land, and prefers to extend the area of the ground floor, rather than to build upward. The breadth of the front (48 feet), the large entrance and window openings, the spacious verandas, and broad steps, are each prominent and desirable features, indicative of comforts and hospitality. The elevated, or second story part of the Main House, forms a substantial and fitting center, around which the roofs of the wings and verandas incline, and adds largely in

giving poise and character to the whole building. The height from the earth grades to the frame-work of the building is 2 feet. Its location should have a good

FIG. 62.—FRONT VIEW OF HOUSE.



surface drainage assured during rainy seasons, and afford pleasant outlooks from the verandas.... INTERIOR.—In most parts of the South, very much of the year could be

comfortably spent out of doors altogether, but for the requirements of shade and retirement. There are times,

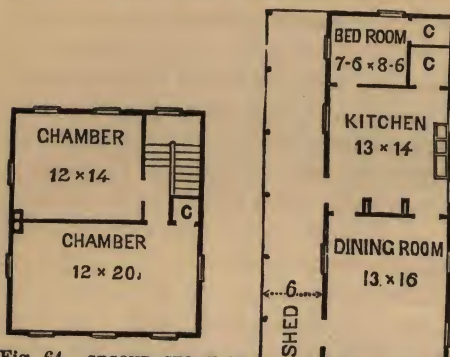


Fig. 64.—SECOND STORY OF MAIN BUILDING.

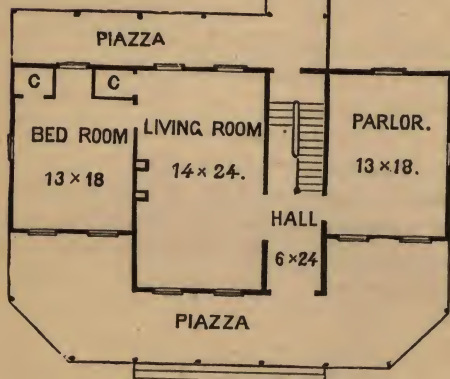


Fig. 63.—FIRST STORY.

however, when severe weather makes it necessary that one's family should be well housed, and when a good fire is both a luxury and necessity. A house for such a latitude should have large rooms, with high ceilings, an abundance of door and window openings, and a plentiful spread of shady verandas. Where practicable, the windows should have folding sashes opening to the floor, if protected by outside coverings. There should be at

least one chimney in the main or highest part of the house, having a large open fire-place adapted to the use

of wood for fuel, and having openings near the room ceilings into the flues, for ventilation. The Dining-room, Kitchen, and the more domestic offices, require a separate and distinct building, situated a short distance in the rear of the house, and connected with it by a covered passage-way. . . . FIRST STORY, (fig. 63.)—Hight of ceiling 10 feet. The simple arrangement shown provides for each of the above requirements. The front Entrance is through large double doors. The Hall extends through the house. The Living-room, a large apartment adapted to a good-sized family, is centrally situated, and protected on every side from the direct rays of the sun ; it adjoins the pleasant and shady verandas front and rear, both being accessible through the folding windows, that open like doors down to the floor. It communicates with the hall through wide double doors, has a large closet and an open fire. The Bedroom is of good dimensions, has three windows opening to the verandas, and one side window. The two closets are so arranged as to form an alcove to the rear window. The ceiling of this alcove is arched over, producing a very pleasant effect. An opening is made near the ceiling into one of the flues of the adjoining chimney for ceiling ventilation. The Parlor (or Library) is situated in the most quiet part of the building, where company may be entertained, or persons may engage in reading or study, without disturbance from those engaged in housework. Large windows open to the front veranda, and other windows are provided at the side and rear. A covered Passage-way leads from the rear hall door to the food departments. These consist of a Dining-room, Kitchen, Store-room, and two Closets, and to the rear of these is added a servant's Bedroom. The dining-room and kitchen are each of ample size, with windows arranged on opposite sides to admit a plentiful supply of fresh air. A pump, sink, and two wash-tubs are provided in the kitchen. The store-room and closets

are thoroughly shelved. If desirable, a china closet may be easily constructed at one side of the fire-place, into which one of the doors already provided would open....

SECOND STORY, (fig. 64.)—Height of ceiling 9 feet. This may be divided into two or more rooms, as required, for bedrooms. The cross-partitions may be 8 feet high, admitting a free passage of air above them....

CONSTRUCTION.—Brick piers, placed 6 feet apart under all sills, are intended for the foundation. The remaining space is left unobstructed for the circulation of air. A cellar may be excavated, and walled up under the main house, with stairs leading to it from the rear veranda, under the main flight. In the estimate, provision is made for a regular frame of sawed timber, which should be framed and raised in a substantial manner. The siding for the main house and wings is of 6-inch pine clap-boards, laid 5 inches to the weather. The roofs of the main house and wings are laid with hemlock boards; all other roofs and cornice projections are laid with inverted $1 \times 4\frac{1}{2}$ -inch tongued and grooved pine flooring, and lastly covered with I C. charcoal tin, locked and soldered in the best manner. The cornices are constructed with wide projections, and have neat truss supports. The verandas are made with simple parts. The columns for the front are 7-inch boxed, with bases, and scrolled spandrels; for the rear of 3×4 joist with bases, and plain spandrels. The veranda plates and rafters are dressed for painting, and are left exposed to sight. The pediments shown on the front are of open work, to allow the warmed air from near the roofs to escape. The upper frame-work (plates and rafters) of the rear building are also planed, and left exposed to sight from the inside. The inclosing and partitions for this part are of $1 \times 4\frac{1}{2}$ -inch pine tongued and grooved flooring, dressed on both sides, put on in a vertical manner, and nailed to the sills and plates; $1\frac{1}{4}$ -inch pine battens are put around the inside of the rooms at

the proper height for a chair-rail ($2\frac{3}{4}$ feet to the upper edge), and joined to the casings of the doors and windows of like materials, and all thoroughly nailed with "clinch" nails to the upright boarding. The roof is built as described for the verandas, is double pitch, and has sufficient spread to include the shed, making it a part of the same building. The kitchen chimney is built nearly in the center of this building, has a large open fire-place, and has a good height above the roof. All floors are of $1 \times 4\frac{1}{2}$ -inch tongued and grooved pine flooring, close laid and blind nailed. All rooms in the main building and wings are hard-finished upon two coats of brown mortar. All work usually painted has two coats of good paint. The roof-gutters are made as shown in Design V....

ESTIMATE :

8,000 bricks in piers and chimneys, furnished and laid, at \$12 per M....	\$96.00
550 yards plastering, at 28c. per yard.....	154.00
5,054 ft. timber, at \$15 per M.....	75.81
Sills, 4×8 in. 261 ft. long.	32 beams, 2×8 in. 21 ft. long.
Ties, 4×6 in. 261 ft. long.	4 posts, 4×7 in. 22 ft. long.
Plates, 4×6 in. 92 ft. long.	1 piazza sill, 3×8 in. 230 ft. long.
4 hips, 3×8 in. 17 ft. long.	1 piazza plate, 3×8 in. 206 ft. long.
56 beams, 2×8 in. 14 ft. long.	Piazza beams, 2×6 in. 384 ft. long.
50 joist, 3×4 in. 13 ft. long, at 16c. each.....	8.00
300 wall-strips, 2×4 in. 13 ft. long, at 11c.....	33.00
370 siding (6-inch clap-boards), at 18c. each	66.60
170 hemlock boards, at 16c. each.....	27.20
240 ft. cornice, bracketed, at 20c. per ft.....	48.00
208 ft. simple rear cornice, at 8c. per ft.....	16.64
38 squares of tin, at \$7 per square.....	266.00
6,000 ft. of $1 \times 4\frac{1}{2}$ tongued and grooved flooring pine, at 3c. per ft.....	180.00
24 piazza columns, complete, average at \$1 each.....	24.00
1 stairs, complete, \$50; 31 windows, at \$10, \$310.....	360.00
20 doors, at \$8, \$160; 1 mantle, \$50.....	210.00
Sinks, pumps, and wash-tubs.....	22.00
Closet finish, \$12; nails, \$25.....	37.00
Painting, \$100; carting, \$30.....	120.00
Boards for outside casings and incidentals.....	105.75
Carpenter's labor.....	150.00
Total cost, complete.....	\$2,000.00

DESIGN XVI.

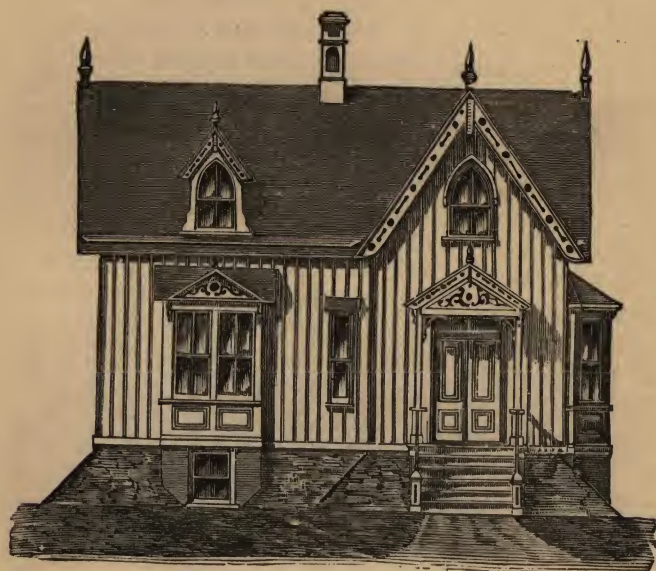


Fig. 65.—ELEVATION OF HOUSE.

A HOUSE COSTING \$2,100.

This plan, embodying the principal characteristics of a design I made several years ago, for the residence of Mr. Arthur Waller, Newtown, L. I., has a homelike, tasteful, and picturesque appearance—particularly now, with its neatly laid-out grounds and grown up shrubbery, which especially befit its *pointed style*, and demonstrate the harmony that exists between these simple *cottage* outlines, and rural surroundings. It is thus adapted to either a suburban or more retired country situation.... ELEVATION, (fig. 65.)—A noticeable peculiarity is the earth finish around the foundation, which is simply utilizing the earth from the cellar. This is banked against

the foundation, up to within six inches of the wood, evenly graded at 45 degrees angle, and neatly covered with closely laid turf. This conceals a roughly constructed foundation ; it insures more dryness of the cellar, and consequently of the whole house ; it guards the cellar against extreme heat in summer, and frost in winter ; and it gives such a visible breadth of bottom as to add to its apparent strength. This earth finish around the foundation is especially adapted to wet or clayey soils, where it is desirable to have the cellar mostly above ground ; at the same time it secures greater elevation to the whole building. There are marked features of dissimilarity in the several

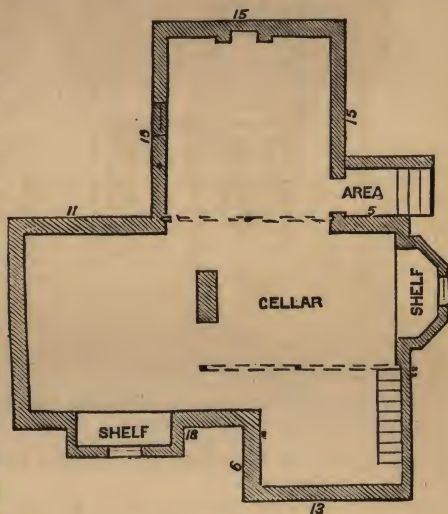


Fig 66.—PLAN OF CELLAR.

openings, and in the details of the exterior dressing, each part being adapted to its special purpose, and so arranged as to be in keeping with the general design ; it therefore unites harmony and beauty. . . . CELLAR, (fig. 66.)—The Cellar extends under the whole house ; clear height $6\frac{1}{2}$ feet. The outside entrance to the cellar is by an area-way, having stone steps and walls, with hatchway and inside doors ; the hatchway doors, when closed, being even with the sloping earth finish. . . . FIRST STORY, (fig. 67.)—Height of ceiling $9\frac{1}{2}$ feet. The irregular outlines

of this plan contribute to the cheerfulness of the different apartments, by giving opportunity for the insertion of windows where they will command the most pleasing prospects. The principal entrance is from the porch through double doors to the spacious hall, which adjoins the parlor and dining-room. The Parlor has one bay and

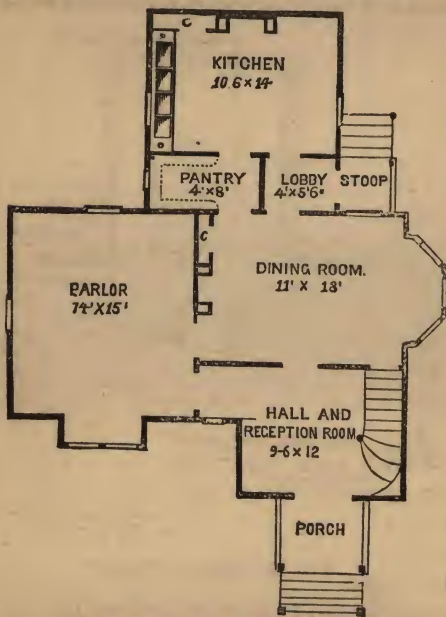


Fig. 67.—PLAN OF FIRST FLOOR.

two plain windows, with large wall space for furniture and wall decoration. The Dining-room is conveniently arranged to connect with the principal hall, parlor, rear lobby, large pantry, or closet, and the cellar stairway, and has a large bay and one plain window. The Kitchen is planned to have a range, sink, pump, wash-

tubs, and the usual pipes for cold and hot water, and is provided with two windows, situated in opposite sides of the room to give abundant light, and afford thorough ventilation; a closet adjoins the chimney-breast, and a cupboard is put beneath the sink. The Pantry is of good dimensions, contiguous to both dining-room and kitchen, has a suitable window, and is furnished with shelving. The rear entrance is from the covered stoop to the rear

lobby, and from thence to either dining-room or kitchen. . . . SECOND STORY, (fig. 68.)—This story is reached by a winding stairway from the principal hall, and contains four good-sized chambers, a bath-room, five large closets, and the needed passage-ways. The breast-walls are vertical to the height of $3\frac{1}{2}$ feet, and are continued upward along the underside of the steep roof frame-work to the ceiling, which is 8 feet high. The Bath-room is provided with a bath-tub and seat - closet. The Tank is 1 foot 8 in. wide, 2 feet long, and 3 feet deep, and is placed in the closet adjoining the bath-room, at a height of 2 feet above the floor, and provided with a neat-fitting lid. The spaces above and below the tank may be used as a closet for toweling, etc. The

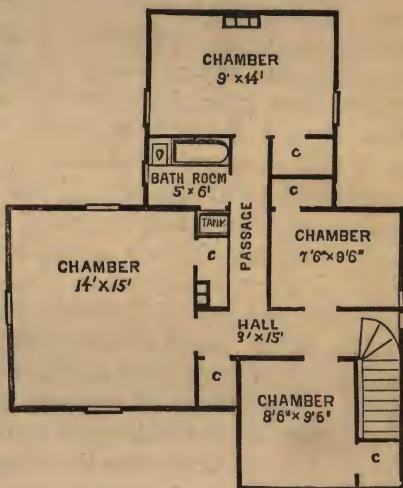


Fig. 68.—PLAN OF SECOND FLOOR.

interior location of this tank should insure it against frost, so long as the house is occupied by the family. . . . CONSTRUCTION.—The excavations for the cellar are 2 feet deep, and the earth is used as above described. The materials for the principal foundations may be of the roughest stone, such as are commonly used in farm-fencing, and coarse mortar. Very little skill is required in the construction of these walls, as only the last, or top course, is seen from the outside, which should be laid to a line, and levelled to receive the frame-work. The exposed portions of the bay-window foundations are

constructed of brick laid in mortar, resting on stonework, and leaving an interior recess or shelf, as shown on the cellar plan. The cellar windows are of good dimensions, and situated where they will insure sufficient light, and provide for the complete airing of the cellar. An opening should be left in one, or both of the chimneys, near the cellar ceiling, having a continuous flue to the top, which will be heated by contact with the fire-places above when in use, and produce a draft that will exhaust the poisonous vapors always generated in cellars, and prevent them from rising through the house to contaminate the air of the living-rooms. This cellar may be easily and cheaply divided into separate apartments by rough planking or otherwise, if ever desirable. The rear portion might be readily converted into a laundry, where the wash-tubs, with their accompanying pipes, might be placed, leaving more kitchen room, and relieving it of the steam and general disturbance of the ever-recurring washing days. Large durable posts are placed in the cellar, resting on large flat stones that have been embedded in the cellar bottom, as supports for the 4×8-inch girders, shown on the cellar plan by the dotted lines. By the estimate, it will be seen that very little timber is used in the frame-work, of which the sills and beams comprise the heavier parts. I would enforce the importance of having the frame fitted and secured together in a substantial manner. The beams should be bridged as described for Design XVII. . . . The exterior sides of the frame-work are designed to be inclosed with double boarding, with an intermediate lining of tarred felting. The first covering should be milled to even thicknesses, and put on horizontally and double nailed to each stud. The felting is next applied in whole width strips, running from the sill to the plate. The water-table and window-frames are next put in their places, after which the final covering of tongued and grooved sheathing is put on vertically, with the lower

ends neatly fitted to the water-table, and the upper ends covered with a 10-inch board forming a frieze to the cornice. The siding should then be painted one coat in a thorough manner, when battens of $1\frac{1}{2}$ inch "half round" (previously painted both sides) are firmly nailed over the joints of the sheathing. The windows are all arranged for $1\frac{1}{2}$ -inch sash, hung to iron weights with good cord, and neatly cased and moulded on the inside; outside blinds are intended for each window above the cellar. The cornices are constructed in the simplest manner, and the perforated barge and finials are made as indicated by the elevation, and placed near the extremity of the gable cornices, from which ever-varying shadows are made against the building, producing the most delicate and pleasing effects. It is purposely intended that the roofs of the principal building, porch, stoop, bay, and dormer windows, shall have sufficient pitch for shingling

The character of the balance of the work may be inferred from the estimate which is given in detail.—ESTIMATE :

61 yards excavation, at 20c. per yard.....	\$12.20
1,278 ft. stone foundation, complete, at 12c. per ft.....	153.36
5,000 brick for bays and chimneys, furnished and laid, at \$12 per M.....	60.00
30 ft. stone steps and coping, at 30c. per ft.....	9.00
660 yards 3-coat plastering, complete, at 28c. per yard.....	184.80
3,526 ft. timber, at \$15 per M.....	52.89
1 sill, 4×8 in. 151 ft. long.	13 beams, 3×8 in. 22 ft. long.
10 posts, 4×6 in. 13 ft. long.	19 beams, 3×8 in. 16 ft. long.
1 plate, 4×6 in. 136 ft. long.	15 beams, 3×8 in. 15 ft. long.
4 valleys, 3×7 in. 17 ft. long.	1 beam, 3×7 in. 80 ft. long.
1 girder, 4×8 in. 16 ft. long.	50 rafters, 3×4 in. 13 ft. long.
300 wall-strips, 2×4×13, at 11c. each.....	33.00
200 sheathing, 9 in., at 18c. each.....	36.00
100 lbs. tarred felting, at 5c. per lb.....	5.00
200 tongued and grooved sheathing, at 28c. each.....	56.00
200 battens, at 6c. each.....	12.00
Materials in cornices and water-table.....	38.00
325 shingling-lath, $1\frac{1}{2}$ ×2×13, at 6c. each.....	19.50
60 bunches shingles, at \$1.50 per bunch.....	90.00
177 flooring, $1\frac{1}{2}$ ×9×1 in., at 25c. each.....	44.25
2 stoops (front and rear), complete.....	80.00
2 bay-windows (with blinds), complete.....	100.00
10 plain windows (with blinds), complete, at \$12 each.....	120.00
4 dormer windows (with blinds), complete, at \$20 each.....	80.00
3 cellar windows, complete, at \$6 each.....	18.00
Stairs, complete, \$75: 24 doors, complete, at \$8 each, \$192.....	267.00
3 mantles, complete, \$20, \$10, and \$6.....	36.00
Shelving, etc., \$12; nails, \$18; painting, \$110.....	140.00
Plumbing and range, complete, \$222.70; cartage, average 1 mile, \$25.....	247.70
Carpenter's labor, not included above.....	150.00
For contingencies.....	55.80
Total cost, complete.....	\$2,100.00

DESIGN XVII.



Fig. 69.—ELEVATION OF FRONT OF HOUSE.

A HOUSE COSTING \$2,200.

These plans are for a full two-story house, that will embrace the merits of the most economical form of construction (having a floor measurement of 24×28 , nearly

square), with symmetry of style, and containing a very commodious and convenient interior arrangement. The ELEVATION (fig. 69), has marked features of simplicity and refinement, with sufficient diversity of parts to give variety and grace, without pretentious display. We invariably recommend high foundations for houses of this character; of course a foot in height at the bottom will add a foot to the height of the whole, imparting a better appearance externally, and on account of the better ventilation thereby afforded to the cellar, adds greatly to the healthfulness of the interior of the whole house. Additional steps will be required to the stoops, but the cost of these are compensated by deductions in the excavation for the cellar, and stone steps to the area. The large porch and double doors, the bay and other windows, each distinctive in themselves, and adapted to their places, similar only in conformity of character, are so proportioned as to harmonize with each other with pleasing effect. The pediments of the roof are so arranged that each "face" of the building will have very nearly the same appearance of outline. The main cornice projects two feet beyond the frame-work of the house, and is supported by large trusses; all other cornices and window-caps have proportionate projections, insuring heavy shadows, giving

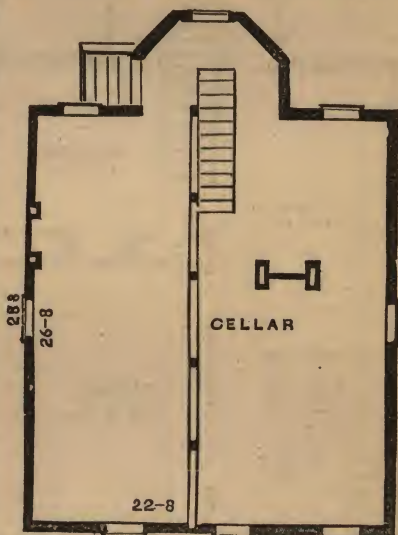


Fig. 70.—PLAN OF CELLAR.

relief and finish to the whole.... CELLAR, (fig. 70.)—Excavations for this cellar are made 2 feet 6 inches below the general surface of the ground. The Foundation-

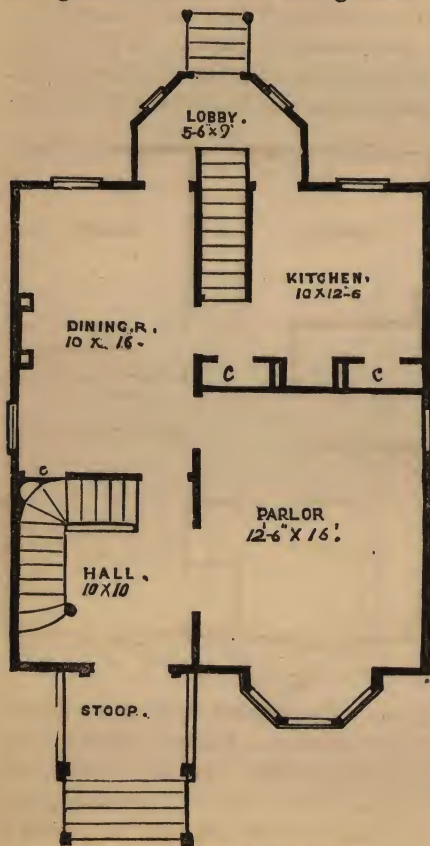


Fig. 71.—PLAN OF FIRST FLOOR.

porch, through large double doors, is square (10×10 feet), and contains the principal stairs, which are built with a quarter circle and niche nearly in the center of their height, as described in Design XII. This hall

walls, Chimneys, Girder - supports, and rear Area-walls are built as described for Design XII., after which the earth is graded around, and up against the foundation, so as to give such slope as will turn the water away from the house and walks, leaving the foundation 4 feet above the final grade..... FIRST STORY, (fig. 71) —This story contains the principal hall, parlor, dining or living-room, kitchen, rear lobby, three closets, and private stairs. The principal Hall is entered from the front

connects with the parlor through double doors ; this will be found to give an impression of amplitude that would scarcely be expected in a house of this size. The Parlor has a large bay-window, finished with elliptical arch and ornamental corbels, and a marble mantle. The Dining-room is intended as the living-room of the family, and communicates with each room and hall of the first story ; has a closet under the front stairs, and has a marble mantle. The Kitchen is provided with a large range, two closets, sink, with cold and hot water, and closet underneath, and communicates with the dining-room, lobby, and cellar stairway. The rear entrance to this story is through the lobby, which

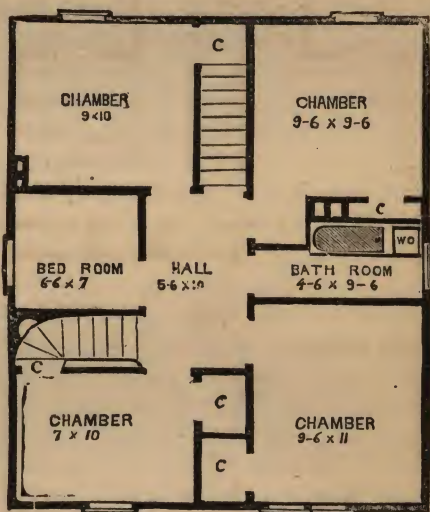


Fig. 72.—PLAN OF SECOND FLOOR.

has two small windows. The private stairs are arranged to start from the rear lobby.... SECOND STORY, (fig. 72.)—The manner in which this story is divided into rooms very much resemble a “double” house, the hall being nearly in the center of the house, and the rooms at either side : contains hall, two stairways, six rooms, and five closets. The hall is 5 ft. 6 in. $\times$ 10 ft., and has seven doors leading from it to the different rooms and private stairway. Many persons require a “study”; the room directly above the principal hall is best adapted for such

purpose, has a large closet, and is most convenient to the stairs. The door to this room should have ground glass upper panels, to admit light to the hall. The Bath-room is provided with French bath-tub, seat-closet, and wash-basin. The soil-pipe from this story will be concealed by passing down inside one of the kitchen closets. Marble shelves, resting on stucco trusses, are intended for each of the four principal rooms of this story.... GENERAL DETAILS.—It is intended that all the work should be done in a workmanlike and substantial manner, of good materials, as indicated in the estimate. All the principal timber is framed together, and raised in the usual manner, and secured with hard-wood pins. The enclosing should be dressed, of thoroughly seasoned materials, and nailed with 10d. nails. The cornices are ornamented with bold panelled brackets and dentil courses. Each gable is provided with a circular ventilator. All roofs are covered with charcoal tin, laid on rough boards, and have gutters as described for Design V., at a cost of 10 cts. per running foot. The columns of the front porch are turned, and have ornamental caps and square pedestals. The stoop-rail is 5 inches wide, and the balusters are scroll-sawed, of 1 $\frac{1}{2}$ -inch pine plank. The trusses under the bay-window are large, scroll-sawed, and ornamental. The flooring should be thoroughly dried, close-laid, and double-nailed to each beam with 10d. nails. While laying the floor (having reached the center of the span of the beams), a row of cross-bridging should be put in, in a strong manner. In this way, the *inequalities* of the upper surfaces of the beams, which are always more or less sprung, will be brought *into line* by the flooring, and each piece of bridging will receive its relative proportion of the weight. The tarred paper is next inserted between the outside studding, in the manner described for Design XI., which is much cheaper than “brick-filling,” and for many reasons more desirable. The cen-

tral partitions, that carry the principal weight, should be studded strongly of 4-inch materials, or wall-strips set edgeways. All closet, stair, and cross partitions may be set of 2-inch materials, or wall-strips set flatways. This latter method saves nearly one-half of the space taken by the partitions, which may be added to the size of the rooms, where it frequently happens that a few inches becomes a matter of importance. The second-story ceiling timbers are of wall-strips, put 12 inches from centers, and a flooring of rough boards is laid over a part, to make room for storage, etc. All sash are $1\frac{1}{4}$ inches thick, and have second quality French glass in them, and are hung with iron weights. We think there is a good opportunity for improvement in the manufacture of window sashes, making them air-tight, and suggest inserting the necessary rubber strips near their edges, and especially in the lips of the check-rail—this would effectually shut out all drafts of air, and make the unsightly and impracticable “weather-strip” unnecessary. All stairs should have $1\frac{1}{4}$ strings and treads, and $\frac{7}{8}$ risers, and should be so housed, glued, and keyed, as to make them solid; squeaky stairs are abominable, and even when assured of their safety, one feels an instinctive suspicion of danger, and will look for treachery in every part of the house. Black walnut panelled newel, moulded rail, and fluted balusters, are intended for the principal flight of stairs. Setting the niche is a part of the stair-builder’s work, and should always be included in his estimate for stairs of this character. The trimming of the hall, dining-room, and parlor, are of clear pine, the architraves are 8 inches wide, and “double-moulded,” with panelled back to each window. Base 7-inch and moulded. All other rooms have 5-inch “single trim,” with back moulding, and base to match. All doors panelled and moulded; all room-doors have mortise locks, and closet-doors have rim-locks, all with brass bolts and keys; knobs and

escutcheons of porcelain, and all saddles are of hard-wood. All parts of this house that are usually painted should have two coats of paint of the best materials, and of such colors as shall suit the owner. All hard-wood, such as the stair-rail, bath-room finish, and saddles, should have two coats of linseed-oil. . . . COST.—Contractors everywhere differ in their estimates for work of any kind. These differences are sometimes the result of some peculiar circumstance, but most generally they arise through some misapprehension of fact; either the plans are incomprehensible, or the description of them ambiguous, leading to a variety of interpretations, and consequently a variety of prices, some of which are too low, and some too high. The low man who usually *proposes* to do the best work, and the most of it, gets the job, and executes the work in accordance with his preconceived ideas, gets his money, and leaves the owner in possession of something he did not expect. No one can know the extent and character of the work better than the projector of them, who should be equally qualified to give exact estimates of quantities and cost of everything connected with their thorough development and execution, and thus truly fulfill his mission as the architect of the works. Cost is one of the most interesting features in any project, and no plan is hardly worth considering that does not comprehend in some way the expense of its execution. Builders and others interested in such plans, will appreciate the detailed estimates, as furnishing the key to the whole plan, supplying the needed information as to the real quality and character of the work.—ESTIMATE :

62 yards excavation, at 20c. per yard.....	\$12.40
13,000 hard brick, furnished and laid, at \$12 per M.....	156.00
700 yards lath and plastering, at 23c. per yard.....	196.00
32 ft. stone steps, at 40c. per ft.....	12.80
24 ft. stone sills, at 30c. per ft.....	7.20
2,300 ft. of timber, at \$15 per M.....	34.50
2 sills, 4×7 in. 24 ft. long.	2 plates, 4×6 in. 24 ft. long.
2 sills, 4×7 in. 28 ft. long.	2 plates, 4×6 in. 28 ft. long.
4 posts, 4×7 in. 20 ft. long.	1 girt, 4×8 in. 28 ft. long.
2 ties, 4×6 in. 24 ft. long.	30 beams, 3×7 in. 24 ft. long.
2 ties, 4×6 in. 23 ft. long.	4 valleys, 3×7 in. 12 ft. long.

400 wall-strips, 2×4 in. 13 ft. long, at 11c. each.....	\$44.00
230 novelty clear siding-boards, at 28c. each.....	64.40
175 lbs. tarred paper, at 5c. per lb.....	8.75
150 tongued and grooved flooring, at 28c. each.....	42.00
130 hemlock roof-boards, 16c. each.....	20.80
12 squares of tin roofing, at \$7 per square.....	84.00
156 ft. gutters and leaders, at 10c. per ft.....	15.60
104 ft. cornice, at 40c. per ft.....	41.60
1 bay-window (with blinds), complete.....	75.00
12 plain windows (with blinds), complete, at \$16 each.....	192.00
8 cellar windows, complete, at \$4 each.....	32.00
1 stoop (except tin as above), complete.....	70.00
27 doors, complete, at \$9 each, \$243; 3 stairs, complete, \$70.....	313.00
2 marble mantles, and 4 shelves on trusses.....	50.00
Range, plumbing, sink, bath, water-closet, and pump.....	314.55
Corner-boards, base, and shelving, \$32.50; nails, \$20.....	52.50
Cartage, average one mile.....	20.00
Capenter's labor, not included above, \$200; painting, \$100.....	300.00
Incidentals.....	40.90
Total cost, complete.....	\$2,200.00

DESIGN XVIII.

A SOUTHERN HOUSE COSTING \$2,200.

This plan of a simple, yet genteel Southern house, embraces ample interior accommodation for the wants of a good-sized family. It has an abundance of outside verandas and artificial shade, and may be constructed at a very moderate cost.... **EXTERIOR**, (fig. 73).—The style is adapted to the Middle and Southern States, because of its elevation and airiness, the overhanging projections of its roof, and the facility with which wings or verandas may be added. The Tower is a conspicuous feature, and though without any special ornamentation, it gives an expression of unity and completeness to the whole structure. The Verandas on every side afford protection from the sun. Many persons prefer disconnected verandas (as shown in figs. 73 and 75), with open ends to the roofs for the escape of the heated air that would otherwise be retained in them. Moreover, disconnected verandas prevent the annoyance arising from the noise made by children who are fond of running and playing upon them. **CELLAR**, (fig. 74).—This is under the kitchen wing only; is 6½ feet deep, has two windows, an outside en-

trance with stone steps, and a stairway leading to the rear entry of the first floor. . . . FIRST STORY, (fig. 75.)—Hight of ceiling in the main house, 11 feet, and in the wing 9 feet. The entrance Hall, nearly square, and en-

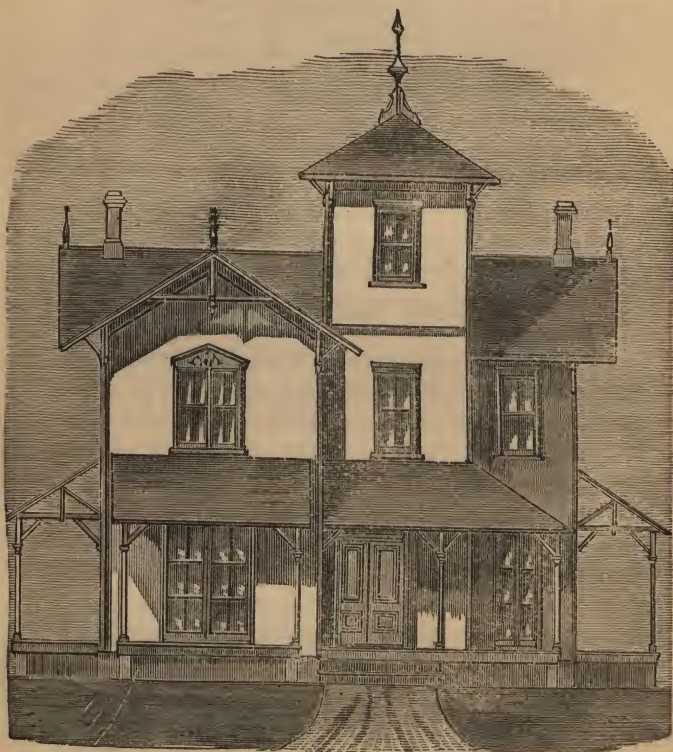


Fig. 73.—VIEW OF EXTERIOR OF A SOUTHERN HOUSE.

tered from the front piazza through double doors, contains the main stairs, and communicates with the parlor and dining-room. Each of these apartments communicates with the library through large sliding-doors. The windows to these rooms open to the floor, and are pro-

tected on the outside by the verandas. The front parlor window is $6\frac{1}{2}$ feet wide, with the sashes arranged to slide in pockets at either side, by which means the parlor is apparently prolonged to, and may be used with the veranda. Each of the large rooms has fire-places and marble mantles. The closet for the dining-room is under the main stairs. The Kitchen is in the rear wing, and separated from the main house by the rear lobby and the pantry; it has a good-sized double window at each side, a large pantry, and a fire-place. In the rear entry are stairways leading to the second story and to the cellar. . . . SECOND STORY, (fig. 76.)

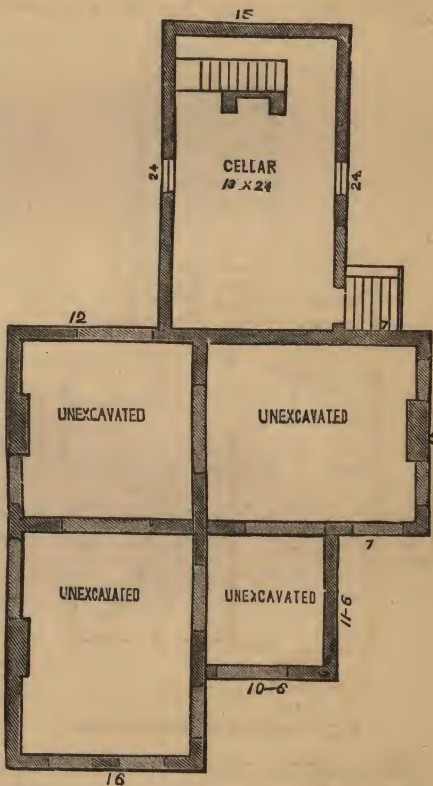


Fig. 74.—CELLAR AND GROUND PLAN.

—Height of ceilings in main house, 9 feet, and in the wing 7 feet. It is divided into six chambers, besides halls and closets. The three larger Chambers have fire-places with marble shelves, and two windows in each. The window in the small chamber is placed near the

ceiling, above the kitchen roof. The two Chambers in the wing are intended as servants rooms, and have no communication with the main house.....TOWER AND ATTIC.—The Tower has an inclosed stairway, with a

door at the foot. The main roof finish at the rear of the tower is leveled even with the main ridge, inclosing the intervening space ; this affords room for a door leading from the tower to the attic. This story is thoroughly floored, and has small windows in each gable, and is useful as a place for storage. In cases of necessity, a portion of this attic may be used for bedrooms....

CONSTRUCTION.

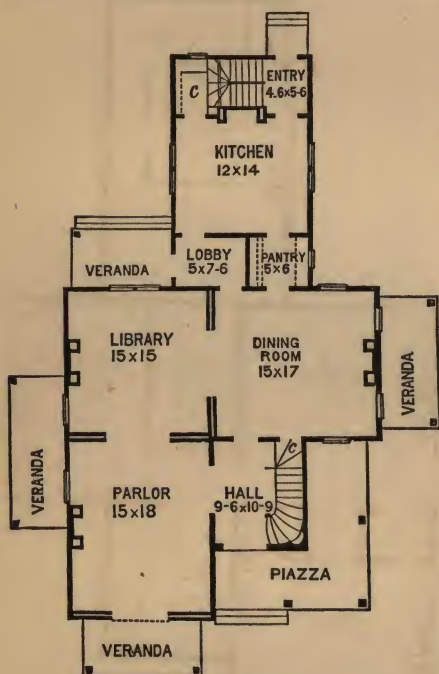


Fig. 75.—PLAN OF FIRST FLOOR.

—The Cellar excavations are made in the ground $4\frac{1}{2}$ feet deep, and for the underpinning of the main house one foot. The loose earth is used in grading, raising the surface immediately surrounding the foundation 8 inches. The foundation walls are 8 inches thick, of hard brick and good mortar. The cellar walls are $6\frac{1}{2}$ feet high, and the underpinning 3 feet 2 inches high, leaving an exposed surface 18 inches high at completion. Only the portions of

the foundation plan, shown darker in the plan, fig. 74, are walled, the intervening spaces being left open for the free circulation of air. The general character of the materials to be used in the construction of this house (a large portion of which is milled, and manufactured ready for use,) may be inferred from the appended estimate. The manner of putting these materials together is of great importance, and should be entrusted only to skillful and thorough workmen. The details of the exterior finish are so plain, that the work of "getting out" the several parts may be done by the mechanics employed in building, without recourse to the scroll-saw or carver. The truss-work of the cornices, and the open frame-work, and columns of the verandas, are of dressed timber, and stop-chamfered. All the roofs have sufficient pitch to allow the use of shingles, which are much lighter and cooler than slate or metal. Veranda roofs so

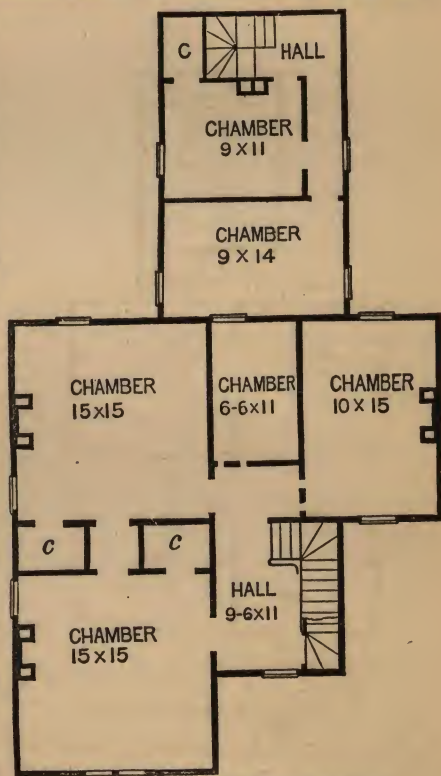


Fig. 76.—PLAN OF SECOND FLOOR.

The truss-work of the cornices, and the open frame-work, and columns of the verandas, are of dressed timber, and stop-chamfered. All the roofs have sufficient pitch to allow the use of shingles, which are much lighter and cooler than slate or metal. Veranda roofs so

constructed do not reflect so much heat into the chamber windows as others, which is important in a warm climate.....**VENTILATION.**—Large window openings, with easy working sashes, are provided, and afford the best means of changing the air of any apartment. The chimneys are large, and have open fire-places, and ventilating side-flues with registers near the ceilings. These openings, which should never be closed, will be found to afford satisfactory ventilation. During seasons of extreme heat, the tower may be made to serve as a general ventilator, by lowering the upper sashes, and opening all the doors leading to it. The following estimate includes everything necessary to complete this building in a thorough manner, at prices now ruling in the vicinity of New York.—**ESTIMATE :**

61 yards excavation, at 20c. per yard.....	\$12.80
15,000 bricks, furnished and laid, at \$12 per M.....	180.00
26 ft. stone steps and sills, at 30c. per ft.....	7.80
700 yards plastering, at 28c. per yard.....	196.00
6,112 ft. of timber, at \$15 per M.....	91.68
Sills, 4×8 in. 247 ft. long.	
1 tie, 4×6 in. 247 ft. long.	
1 plate, 4×6 in. 247 ft. long.	
7 posts, 4×7 in. 22 ft. long.	
4 posts, 4×7 in. 31 ft. long.	
1 ridge, 2×7 in. 40 ft. long.	
1 ridge, 2×7 in. 30 ft. long.	
78 beams, 2×8 in. 16 ft. long.	
34 beams, 2×8 in. 15 ft. long.	
39 beams, 2×7 in. 16 ft. long.	
15 beams, 2×7 in. 11 ft. lodg.	
1 piazza, 2×7 in. 375 ft. long.	
2 valleys, 3×8 in. 16 ft. long.	
100 joist, 3×4 in. 13 ft. long, at 16c. each.....	16.00
400 wall-strips, 2×4 in. 13 ft. long, at 11c. each.....	44.00
420 siding (6½ in. wide 13 ft. long, at 26c. each.....	109.20
Materials in cornices and verandas.....	40.00
120 hemlock boards (for main house), at 15c. each.....	18.00
236 pine boards for roofing, 4½×13, at 18c. each.....	42.48
67 bunches shingles, at \$1.50 per bunch.....	100.50
Finial on tower.....	8.00
168 Flooring for verandas, 4½ in. wide, at 20c. each.....	33.60
360 flooring for inside, 9½ in. wide, at 26c. each.....	93.60
Stairs, \$70; closet finish, \$20.....	90.00
2 cellar windows, complete, at \$6 each.....	12.00
23 windows, at \$10, \$280; 32 doors, at \$9, \$288.....	568.00
3 mantles, \$25 each, \$75; 3 shelves, \$6 each, \$18.....	93.00
224 ft. gutters and leaders, at 8c. per ft.....	17.92
Nails, \$22; painting, \$125; carting, \$25.....	172.00
Carpenter's labor, not included above.....	200.00
Incidentals.....	54.02
Total cost, complete.....	\$2,200.00

DESIGN XIX.



Fig. 77.—FRONT VIEW OF HOUSE.

A STONE HOUSE, COSTING \$2,500.

This plan has many features to commend it as an economical country house. It is similar in many respects to Design XXVII., having an equal breadth of front, and is constructed of like substantial materials. The arrangement of the several parts, however, are more regular and compact, and embrace accommodations for a good-sized family.... EXTERIOR, (fig. 77.)—At first sight, the reader will perceive the perfect balance apparent in the outlines and details of the front. Variety is also an especial feature, resulting from the pleasing diversity and systematic distribution of the prominent parts. The site has much effect upon the appearance of any building. This house should have a commanding position to afford such views as would seem to be expected from its broad and generous windows. Health and happiness being

largely dependent on the situation, it is important to select a position having a natural drainage, and therefore more likely to be surrounded with pure wholesome air. . . . CELLAR, (fig. 78.)—Hight $6\frac{1}{2}$ feet. The plain engraving saves the need of further explanation. The ceiling is smoothly “laid off” with one coat of plaster, and the walls are flush-pointed, so that the whole interior may be whitewashed whenever it shall be desirable to lighten or sweeten the cellar. . . . FIRST STORY, (fig. 79.)—

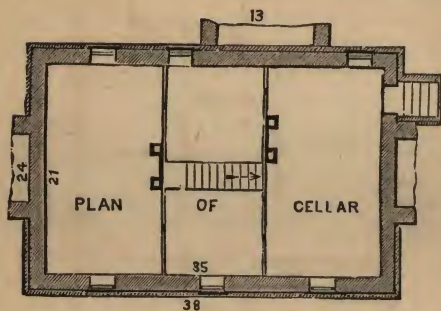


Fig. 78.—PLAN OF CELLAR.

As is suggested by the exterior, system and order are prominent features in the interior arrangement. The main entrance is through double doors. The principal hall is central and roomy,

and contains the open and balustered stairway to the second story. The two principal rooms are of equal size, with outlooks front and rear. The Parlor has a pleasant bay or plant window, arranged to be shut off, when desirable, by large sash doors. This window has no floor, but is cemented around its sides below the floor-line, to secure dryness to the walls, and is filled with earth wherein plants may be grown. The thick masonry surrounding this plant-bed will secure it from frost. The temperature required to make the parlor comfortable will be sufficient for the plants, while the strong sunlight will insure their vigorous growth. A mirror may be placed on the mantle opposite this window, arranged to reflect its contents, and make a most cheerful picture.—The Living-room is a convenient apartment, in easy com-

munication with the front and rear entrances, the wood-house, and cellar-stairs, passing down under the front hall stairs. It has a large pantry, and is provided with a range, sink, stationary wash-tubs, water, and waste-pipes. The importance of having cold and hot water always ready should not be overlooked. Very much of the drudgery of housework in the country consists in drawing and carrying water, and besides, it generally happens that when water is most wanted, the vessels are empty, necessitating great inconvenience and frequent distress.—The Bed-room is situated between the parlor and living-room, and communicates with both, and has a good-sized closet. This apartment may be used as a sewing-room, where such work need not be put away every time it is laid down for a moment. The Wood-house at the rear is constructed of light materials, and serves as a fuel and utensil room.... SECOND STORY, (fig. 80.)—This story is divided into five chambers, a hall, and seven closets. Each room is entered directly from the hall, obviating the too frequent necessity of passing through one room to reach another. Closets are a necessity to any well ordered household; their uses are so numerous that it is hardly possible to provide too many..... REMARKS ON CONSTRUCTION.—The element of durability is an important quality of this structure, avoiding the necessity and

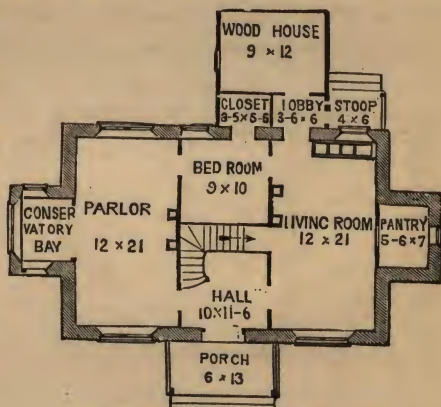


Fig. 79.—PLAN OF FIRST FLOOR.

Fig. 79.—PLAN OF FIRST FLOOR.

expense of frequent repairs. The exterior walls are constructed of stone and brick, as described in Design XXVII. Care should be taken to make these walls perfectly solid and thorough. The mortar used should be of the best lime, and coarse, sharp sand. Such mortar improves with age, always increasing in hardness and strength. The brick corner-work may be laid in dark or blue mortar with good effect in subduing the strong contrasts in color.

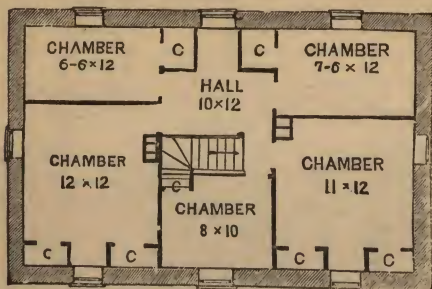


FIG. 80 —PLAN OF SECOND FLOOR.

Interior plastering should never be applied directly to the stone-work. Such walls do not readily conform to the sudden changes of the surrounding temperature, and are rendered

damp and unwholesome from the moisture of the air being condensed upon them. They should be furred off, leaving an air-space between the stone-work and plastering, through the whole height of the wall, and opening into the spaces between the rafters of the roof. Side-walls constructed in this manner afford a most comfortable interior, having a more equal temperature than is possible in the usual frame building, and neither the severe cold of winter, nor the extreme heat of summer, is immediately felt within. The chimneys are of hard brick; their interior location insures a great saving of fuel, as the heat that is radiated from them greatly assists in warming the house. The principal roofs are covered with dark slate. "Keystone" and "Chapman" are good qualities, and are mostly used in this vicinity; they have good color, and do not fade. A good effect is produced

by clipping the exposed corners of about one-third of the slate, in a uniform manner, and laying them in belts of five or six courses each across the roof.

ESTIMATE OF THE COST :

111 yards excavation, at 20c. per yard.....	\$22.20
171 perches stone-work, at \$2.75 per perch.....	470.25
103 ft. stone sills and steps, at 30c. per ft.....	30.90
2,000 bricks in angles, etc., at \$12 per M., laid.....	24.00
4,000 bricks in chimneys, at \$12 per M., laid.....	48.00
660 yards plastering, at 28c. per yard.....	184.80
80 yards plastering in ceiling of cellar, at 20c. per yard.....	16.00
3,367 ft. of timber, at \$15 per M.....	50.50
2 girders, 4×8 in. 32 ft. long.	44 beams, 3×8 in. 13 ft. long.
4 plates, 4×8 in. 11 ft. long.	22 beams, 3×8 in. 11 ft. long.
2 purlins, 4×8 in. 38 ft. long.	40 rafters, 2×5 in. 19 ft. long.
1 ridge, 2×6 in. 29 ft. long.	4 valleys, 3×7 in. 21 ft. long.
1 ridge, 2×6 in. 22 ft. long.	18 collars, 1½×5 in. 14 ft. long.
230 wall-strips, at 11c. each.....	25.30
130 furring strips, at 6c. each.....	7.80
Anchors, of tire iron, \$3; cornice materials, \$30.....	33.00
300 shingling-lath, at 6c. each.....	18.00
Rear wing, exclusive of tin, complete.....	100.00
27 squares of slate, at \$9 per square.....	180.00
32 hemlock boards, at 16c. each.....	5.12
34 squares of tin, at \$7 per square.....	24.50
60 ft. of leaders and gutters, at 10c. per ft.....	6.00
213 flooring, 8 inch, at 25c. each.....	53.25
Stairs, complete.....	70.00
Piazza and stoop, exclusive of tin, complete.....	80.00
6 cellar windows, complete, at \$5 each.....	30.00
17 plain windows, complete, at \$10 each.....	170.00
4 dormer windows, complete, at \$18 each.....	72.00
27 doors, complete, at \$9 each.....	243.00
4 mantles, 2 marble and 2 wooden, complete.....	62.00
Closet finish, complete.....	18.00
Range and plumbing, complete.....	150.00
Nails, \$14; painting, \$60; cartage, \$15.....	89.00
Carpenter's labor, not included above.....	125.00
Incidentals.....	91.38
Total cost, complete.....	\$2,600.00

DESIGN XX.

A COUNTRY HOUSE, COSTING \$2,600.

This plan is somewhat similar in style and materials to Design XXIV. The changes here indicated adapt it to a more southern climate, such as larger window openings, more piazzas, and placing the domestic rooms at the rear of the main building.... EXTERIOR, (fig. 81.)—"Double front" houses (as those having their front entrance in the center are usually called), may face any point of compass,

and are adapted to almost any situation. They appear best when located at sufficient distance from the road to allow extended, neatly laid-out approaches, and thus give an air of retirement.... CELLAR, (fig. 82.)—Hight, 7

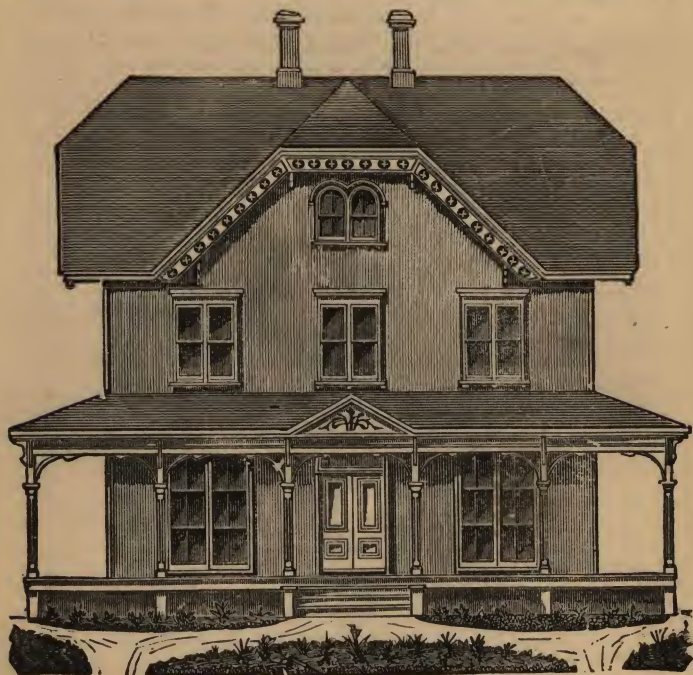


Fig. 81.—ELEVATION OF FRONT OF HOUSE.

feet. Full size of the main building, with window openings on every side.... FIRST STORY, (fig. 83.)—Hight of ceilings in main house, 11 feet; in the wing, 9 feet. The apartments embraced in the main house are unusually large, airy, and pleasant. All the windows open down to the floor, and are protected from sun and rain by the piazza. The Hall has a wide entrance leading from the piazza, and contains the principal flight of stairs. The

Parlor and Living-room are of equal size (14×24 feet), have windows looking in three directions, and have open fire-places in each. The rear entry occupies part of the main house and wing, its height of ceiling is determined by the platform of the main stairs. It communicates conveniently with the rear piazza, main hall, living-room, kitchen, cellar-stairs, and a closet. In the Wing are a kitchen, work-room or summer-kitchen, butler's pantry, and two closets. The Kitchen communicates with the living-room through the butler's pantry, which is "dresser-finished with drawers and shelving. The work-room is furnished with a pump, sink, and two stationary wash-tubs. If desired, a bath-room may be placed in this wing, and fitted up with the necessary plumbing, as shown in Design XXXIII... SECOND STORY, (fig. 84.)—Height of ceiling, 9 feet. A hall, three chambers, a bedroom, and four closets are the divisions of this story. The stairs leading to the attic are placed above those of the first story, with a door at the foot..... ATTIC.—The estimate provides for a floor in this, and for casing the four pair of windows, but it is otherwise left unfinished. Four or more bedrooms may be made in this story if desired.... CONSTRUCTION.—The materials are indicated in the estimate. The foundation-walls show 2 feet above the ground. The timber is framed and raised in the most thorough manner. The beams are placed 2 feet apart from centers, and bridged with one

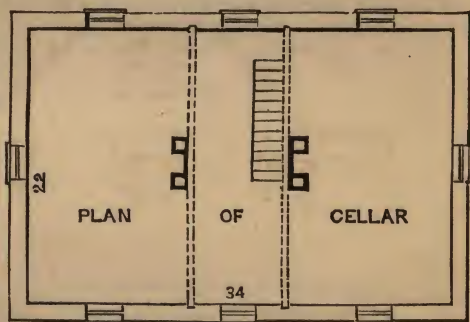


Fig. 82.—PLAN OF CELLAR.

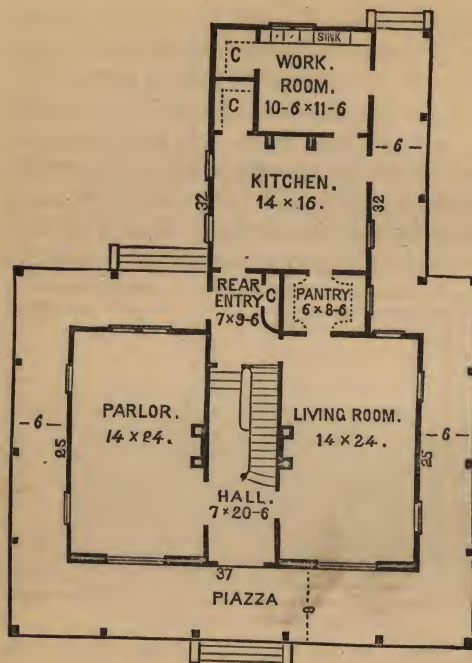


Fig. 83.—PLAN OF FIRST FLOOR.

row of "cross-bridging" in each span. Observe that the main posts are 25 feet long; this includes the whole height from bottom of sills to top plates, and allows for four feet of inside breastwork from the attic floor to foot of main rafters. The main roof is set at an angle of 45° . The "open-worked" barges in the

pediment (fig. 81), are of $1\frac{1}{4}$ -inch-plank, 16 inches wide, pierced in simple figure, and require only one set of patterns for the four gables. The piazza-rafters show in their ceilings. Perforated pediments in each

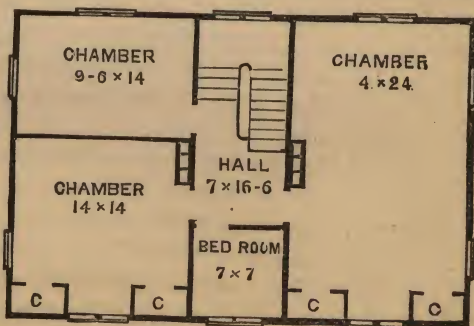


Fig. 84.—PLAN OF SECOND FLOOR.

side allow the escape of heated air from under the roofs. The columns are "boxed" 7 inches square, and chamfered. The spandrels are scroll-sawed from 3-inch timber. The two full stories are hard finished on two coats of brown mortar and seasoned lath. All doors are panelled, and all architraves in the main house are double moulded; in the wing single moulded. All sashes are 1½ inch thick, and glazed with second quality French glass. The parlor and living-room have marble mantles; the chambers have marble shelves resting on stucco trusses. The main stairs have an 8-inch octogan newel, a 2¼ × 4¼, moulded hand-rail, and 2-inch fluted balusters, all of black walnut, as also are the saddles to each room. All knobs, roses, and escutcheons are of white porcelain. All wood usually painted has two coats of best paint, in shades to suit the owner's taste.

ESTIMATE OF COST :

137 yards excavation, complete, at 20c. per yard.....	\$27.40
52 perches stone-work, at \$2.75 per perch.....	143.00
6,000 brick, furnished and laid, at \$12 per M.....	72.00
44 ft. blue-stone, at 30c. per ft.....	13.20
623 yards plastering, complete, at 28c. per yard.....	174.44
7,126 ft. timber, at \$15 per M.....	106.89
1 sill, 4×8 in. 205 ft. long.	
10 posts, 4×8 in. 25 ft. long.	
2 girders, 4×8 in. 25 ft. long.	
1 tie, 4×6 in. 124 ft. long.	
1 plate, 4×6 in. 205 ft. long.	
1 piazza, 3×5 in. 332 ft. long.	
90 beams, 3×8 in. 15 ft. long.	
15 beams, 3×8 in. 17 ft. long.	
4 valleys, 3×8 in. 23 ft. long.	
40 rafters, 3×5 in. 20 ft. long.	
1 piazza, 3×8 in. 370 ft. long.	
500 wall-strips, at 11c. each.....	55.00
360 siding, at 23c. each.....	100.80
Materials in cornices, corner-boards, etc.....	40.00
360 shingling-lath, at 6c. each.....	21.60
65 bunches shingles, at \$1.50 each.....	97.50
134 hemlock boards, at 16c. each.....	21.44
15 squares tin roofing, gutters, and leaders, at 7c. per ft.....	105.00
360 flooring, at 28c. each, \$100.80; stairs, complete, \$90.....	190.80
Piazas, except roofing, complete.....	150.00
8 cellar windows, \$48; 30 windows, \$300.....	348.00
28 doors, complete, at \$10, \$280; closet finish, \$20.....	300.00
Mantles and shelves, \$75; nails, \$20.....	95.00
Painting, complete, \$150; cartage, \$35.....	185.00
Pump, sink, and range, \$60; incidentals, \$42.93.....	102.93
Carpenter's labor, not included above.....	250.00
Total cost, complete.....	\$2,600.00

The following detailed estimate of the cost of windows and doors, "complete," are given in explanation as to what is included in the foregoing and other lists, viz.:

<i>First-class Windows, complete.—For a</i>		<i>Second-class Windows, complete.—For</i>	
2-7×6-2 window, with panelled back, and a full double trim, viz.:		2-7×5-2 window, with plain single moulded trim, viz.:	
22 ft. running lumber in frame, at 4c.....	\$0.88	20 running ft. of lumber in frame, at 4c.....	\$0.80
4 pulleys.....	.14	4 pulleys, at 40c. per dozen.....	.14
28 lbs. iron weights, at 2½c.....	.70	26 lbs. sash-weights, at 2½c.....	.65
Sash cord, 8c.; screws, 3c.....	.11	Sash-cord.....	.08
22 ft. of 8-inch trim, at 8c.....	1.76	Screws.....	.03
Panelled back materials.....	.48	16 ft. of 5-inch trim, at 5c.....	.80
Sash, glazed, counter-checked, and hung.....	2.80	Sash, glazed, counter-checked, and hung.....	2.16
Blinds, with fastenings.....	1.80	Blinds, with fastenings.....	1.56
Materials in outside cap.....	.64	Nosing, apron, and drip.....	.30
Nails, 8c.; labor, \$4.....	4.08	Nails, 6c.; labor, \$2.50.....	2.56
Total.....	\$13.39	Total.....	\$9.08

Where there are an equal number of each class, I should put their cost at \$11.23 each, and where the second class preponderates, as is usually the case, the *average* price is reduced accordingly :

<i>First-class Doors, complete.—Double-</i>		<i>Second-class Doors, complete.—Single-</i>	
faced, 2-8×7 ft., full trimmed:		faced, 2-6×6-8, single trim:	
Door, 4-panelled, at factory.....	\$2.50	Door, 4-panelled, at factory.....	\$1.90
20 ft. running trim, 8 in., at 2½c....	4.20	13 ft. running trim, at 15c.....	2.70
Saddle.....	.15	Saddle.....	.15
Buts and screws.....	.16	Buts and screws.....	.15
Locks and knobs.....	.50	Locks and knobs.....	.35
22 running ft. base, at 9c.....	1.98	22 running ft. base, at 7c.....	1.54
Nails, 6c.; labor, \$3.....	3.06	Nails, 5c.; labor, \$2.....	2.05
Total.....	\$12.55	Total.....	\$8.84

It will be noticed that the item for Base is included in above estimate for doors. The figures (22 feet) are an average per door, deduced from careful calculations, and are introduced here for the purpose of aiding any one in readily making up an estimate for a whole building.

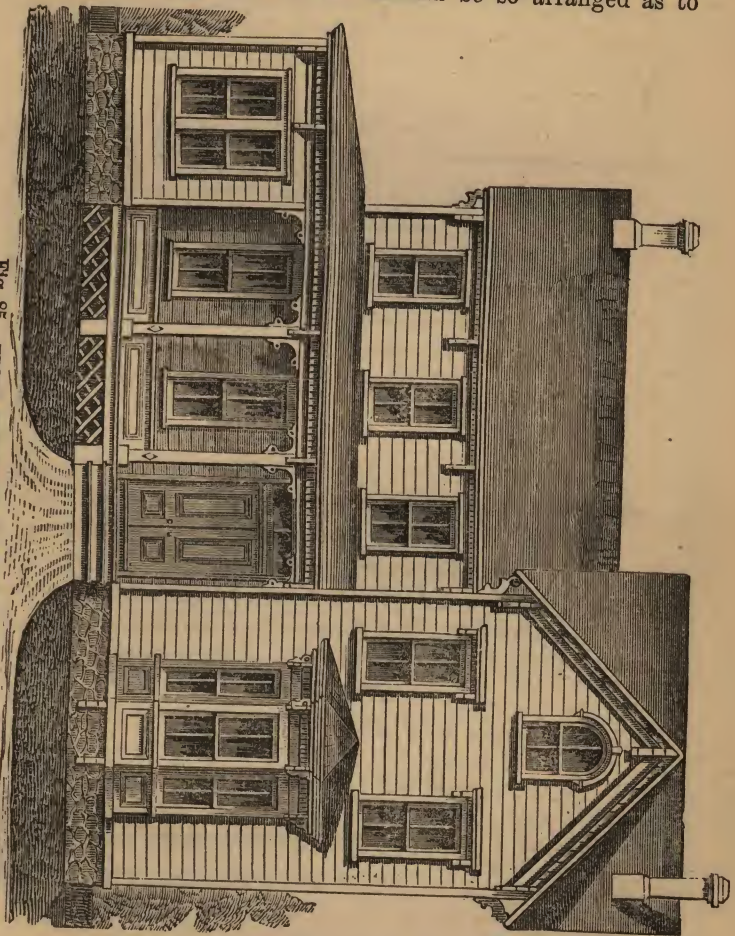
DESIGN XXI.

A FARM HOUSE COSTING \$2,600.

These plans were designed for a convenient and comfortable Farm-house in the American style, comprehending the most economical and practical methods of construction. The size and shape of such houses should be made to conform to the requirements of those who are to

occupy them. Unlike the villager, the farmer has ample road front, and his house should be so arranged as to

FIG. 85.—FRONT ELEVATION OF FARM HOUSE.



secure the most pleasant outlook from the living-rooms.
 EXTERIOR, (fig. 85.)—Farm houses usually stand disconnected and apart from other buildings, and should

have outlines that will best adapt them to the conditions that are otherwise manifest in the location. This plan is intended for an eastern frontage, where it would face the morning sun, when the principal and broader portions of the building, at the right, would be doubly valuable as a shield to ward off the northern winds from the parts of the house most used by the occupants. (By reversing

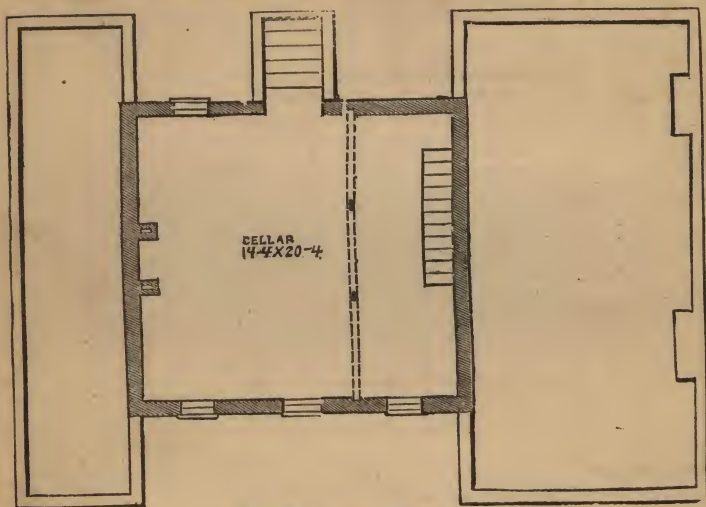


Fig. 86.—PLAN OF CELLAR.

the plan it would be equally adapted to the opposite, or easterly side of a road.) It is intended that the body of the house shall be set at least two feet above the ground; this gives opportunity for good-sized cellar-windows, that will admit light, and afford good openings for cellar ventilation, and also secure the frame-work of the building against moisture from the ground. Such moisture, if allowed, will cause decay of the sills and other principal timbers, and is sure to percolate upward into the house, filling it with unwholesome vapors. The variety of the general outlines as shown in the elevation are calculated

to impart a cheerful and lively appearance always desirable in a country home, and very pleasant to the passer-by. The ridged roofs, with their spreading gables and ample projections, are features of frankness in which there is no attempt at concealment or imitation. The bay-windows, wide entrance, and spacious piazza, are

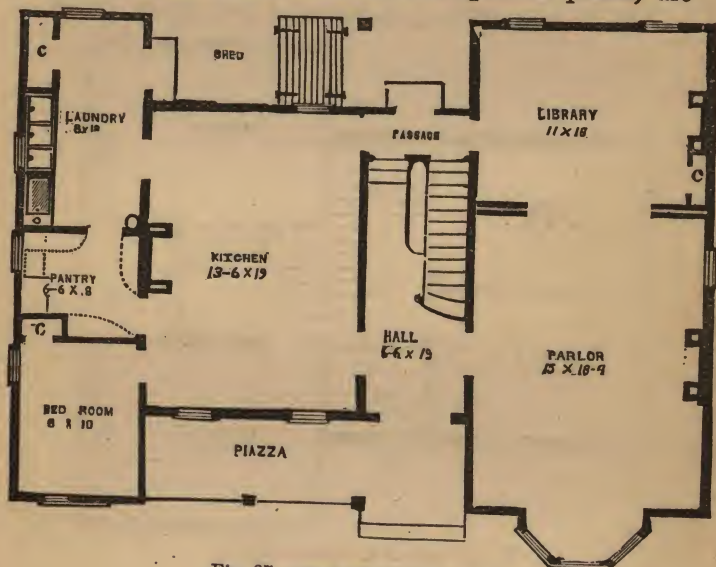


Fig. 87.—PLAN OF FIRST STORY.

each expressive of liberality and refinement. The extreme simplicity of the details, and methods of construction, devoid of all ostentatious display, clearly express the purpose of the building, and commend it to the consideration of all who are interested in rural house building..... FOUNDATION, (fig. 86.)—In most locations stone are abundant; our estimate comprehends the building of the foundation-walls of rough, broken stone, laid in coarse mortar, and neatly pointed where exposed to sight. Any man who is at all familiar with the most ordinary stone-

work, such as building "wall" fences, could build these foundations acceptably; they should be laid up 18 inches thick, and flush with the outside of the frame-work of the building. Our plan shows a cellar under the central part of the building only, which should be 7 feet deep; this cellar will be found sufficiently spacious for the uses of most families, but may be enlarged if desirable. One

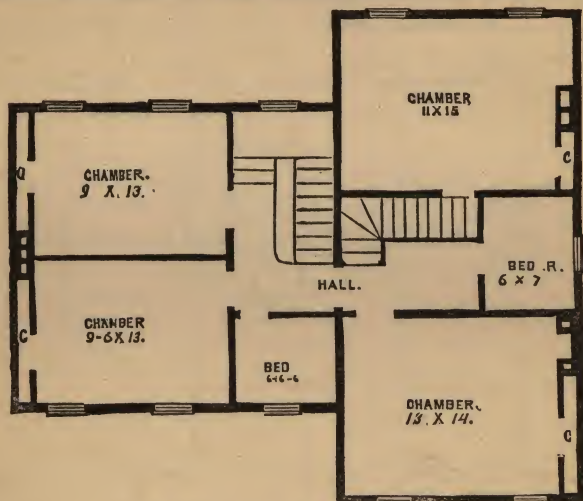


Fig. 88.—PLAN OF SECOND STORY.

of the "wise sayings" we heard in youth was, "always build your cellar under the whole house." Unless there are ample cellars under the barns, the house-cellar is never too large. In this case, it will be but little extra cost and labor to take out the earth, and carry the foundations down. The walls provided would do most of this, and then we have ample cellars for all wants, and have room to partition off fruit and vegetable rooms, the former of which need to be much cooler than the latter, if one would keep fruit well. The side-walls of the area are built of the same materials as the cellar-walls, with

the stone steps inserted while building. The foundations shown on the plan where no cellar is required, are built of the same materials, laid in trenches, which have been excavated 18 inches wide, and 2 feet deep. The chimney foundations should be started and laid up with the other walls. A very effectual ventilation may be provided from the cellar by arranging an opening that shall lead to the left-hand flue of the kitchen chimney; this flue will be warmed by contact with the range when in use, and a strong draft will be made, which will exhaust the damp, foul odors so common in deep cellars. It will be observed that the cellar is protected from the extreme changes of outward temperature by the walls and spaces at each side, and by the partial coverings in front and rear.... FIRST STORY, (fig. 87.)—This story is divided into three large and three small rooms, and hall. By this plan, the kitchen is intended as the living-room of the family, and is so arranged as to be the most *convenient and pleasant room in the house*; has large windows front and rear, which will admit an abundance of light, and afford an outlook each way. A large range is placed in the fire-place, with a water-back connecting with the boiler in the laundry. The clock and lamp-shelf is placed on the opposite side of the room from the fire-place: *should never be over it*. Adjoining the kitchen, and connected with it, is a pantry, containing shelving, drawers, and a wash-tray, with cold and hot water. The Laundry, or *work-room*, is arranged to connect directly with the kitchen and pantry, and leads to the rear outside door. This room is fitted up so that the principal kitchen-work may be done in it, with great facility, and with few steps, and contains a closet, sink, pump, wash-tubs, tank, and boiler. The height of the ceiling in this room is 10 feet in the clear. The Tank (not shown in the drawings), is situated close up to the ceiling, above the pantry door, is 8 feet long, 3 feet wide, and 2 feet deep. The boiler is

of copper, 40-gallon capacity, and is placed directly in the rear of the kitchen chimney. The sink and wash-tubs are shown on the plan, and are to be provided with cold and hot water. The force-pump is placed next to the sink, under the tank—by this method but little plumbing is required, and a very perfect and satisfactory arrangement is secured. The boiler keeps the temperature of this room sufficiently warm to prevent damage to the pipes from frost. The Bedroom also adjoins the kitchen, and has a closet for clothing, and two windows. The principal Hall, included in the central building, is entered through large double doors from the front piazza, and connects through doors with the parlor, kitchen, and back passage, and contains the principal stairs, which are of easy “platform” construction. The Parlor has a large bay-window, marble mantle, and adjoins the library through large sliding-doors. The Library has a marble mantle, and closet, and connects with the back passage at the rear of the principal stairs. The Front Piazza has its ends sheltered by the projections at each side, and is arranged to require but two columns. If desirable at any time, a part of this piazza can be enclosed with sash at very little expense, which would provide a very convenient conservatory for plants and flowers. The rear “shed” is provided with a roof and columns, but has no wooden floor. It is intended that the grounds around the rear of the central building shall be graded well up, say within a foot of the rear door-sills, so as to require but a single step, or large flat stone, to each door. The outside cellar doors would be made to lay even with the final grade, and hung to the coping-stones of the area-walls, and the remaining space paved or flagged with stone. When once properly done, the finish of this character will last a lifetime without trouble, while wood-work could never be satisfactory, and would often require renewal. Whenever the cellar doors are opened, they are

hooked up against the columns, where they form a railing, or guard, to prevent the usual danger of an open hatchway.... The SECOND STORY (fig. 88), has a hall, four large and three small chambers, with four closets, and stairway leading to the attic. Each of the large Chambers has two windows, and a ventilating register in the flue of the chimney adjoining. All these rooms have full high ceilings, and are not so close to the roof as to be affected by their absorbed heat of summer, but have complete square ceilings, with large air-spaces between them and the roofs. The Attic of the principal building is completely floored, and has windows in each gable or pediment, and may be used for storage, drying clothes in stormy weather, and for many other purposes.... CONSTRUCTION.—The estimate appended indicates the kind and quantity of materials used, which will be found to be such as are now most generally adopted for buildings of this character. The work is very simple, and may be executed by the simplest methods. Information concerning the application and uses of the “felting” may be found in Design XI. We have before suggested that “there are circumstances that would justify the building of one part of a house first.” Should it be desirable, the central portion of this house could be built first, and would be found quite sufficient as the dwelling house of a small family, and the remainder added afterwards as required.... ESTIMATE.—The following estimate has been carefully compiled, and may be relied on for quantities, etc. Prices vary in different localities, but the figures here given form a good basis of calculation :

65 yards excavation, at 20c. per yard.....	\$13.00
882 ft. foundation, at 15c. per ft.....	132.30
725 ft. foundation, at 10c. per ft.....	72.50
6,000 bricks in chimneys, at \$12 per M.....	72.00
40 ft. stone steps and coping, at 30c. per ft.....	12.00
900 yards lath and plastering, at 28c. per yard.....	252.00
4,799 ft. of timber, at \$15 per M.....	72.00
Sills, 4×8 in. 218 ft. long.	45 beams, 3×8 in. 16 ft. long.
1 girt, 4×8 in. 20 ft. long.	22 beams, 3×8 in. 22 ft. long.
7 posts, 4×7 in. 22 ft. long.	15 beams, 3×7 in. 9 ft. long.
2 posts, 4×7 in. 18 ft. long.	4 valleys, 3×8 in. 20 ft. long.
Ties and plates, 4×6 in. 384 ft. long.	

500 wall-strips, 2×4 in. 13 ft. long, at 11c. each.....	\$55.00
340 novelty siding boards, 9½ in., at 28c. each.....	95.20
150 lbs. tarred felting, at 5c. per lb.....	7.50
300 matched flooring boards, 9½ in. wide, at 28c. each.....	84.00
20 rough spruce plank, at 25c. each.....	5.00
270 shingling-lath, at 6c. each.....	16.20
48 bunches shingles, at \$1.50 each.....	72.00
75 hemlock boards, 10-inch, at 18c. each.....	13.50
7 squares of tin roofing, at \$9 per square.....	63.00
Materials in cornices and outside casings.....	60.00
33 narrow pine flooring for front piazza, at 25c. each.....	8.25
67 narrow pine ceiling, at 25c. each.....	16.75
1 bay-window, complete.....	75.00
26 plain windows, complete, at \$12 each.....	312.00
4 cellar windows, complete, at \$6 each.....	24.00
30 doors, complete, at \$10 each.....	300.00
Stairs, complete, \$70; 8 closets, fitted complete, \$40.....	111.00
2 marble and 2 pine mantles.....	50.00
Nails, \$20; range, with elevated oven, \$80.....	100.00
Plumbing, \$84; cartage, average 1 mile, \$27.08.....	111.08
Carpenter's labor, not included above.....	250.00
Painting.....	120.00
Incidentals.....	25.72
Total cost, complete.....	\$2,600.00

DESIGN XXII.

A HOUSE COSTING \$2,800.

This plan of a suburban, or a country house, has all the advantages of the square form—providing convenient, commodious interior apartments, and has a simple, expressive outside dress; that compares favorably with more pretentious, expensive dwellings.... EXTERIOR, (89.)—The outlines of the main building are rounded and compact, indicating completeness and solidity. The front tower-like projection is a central and distinctive feature, around which the other parts are symmetrically balanced. The Porch and roofed balconies are simple and neat. The main roof, a new modification of the “Mansard roof,” is a conspicuous part, giving an expression of strength and unity to the design. The main cornice has full projections, with neat solid trusses, and is separated into sections by the chamber windows, giving relief from the monotony and depressing effects usual in all continuous horizontal lines. All the second story windows of the

main building have projecting hoods appropriately interlaced with the principal roof work, securing pleasant shadows to those parts, and imparting a marked finish



Fig. 89.—FRONT ELEVATION.

and variety. The dormer windows are triangular, and are placed immediately above those of the lower stories, prolonging the vertical lines of openings, to which they form a fitting termination.... FIRST STORY, (fig. 90.)—Hight of ceiling, 10 feet. The usual front hall is dispensed with, and the stairway is placed where it is more convenient and accessible, and is not a conductor of cold drafts through the house. Many think it necessary to have stairways share with the parlors the most valuable and conspicuous position ; they should more frequently

be placed in some subordinate relation, without seeming to control the general arrangement. The entrance from the front porch is through double doors to the vestibule, and thence to either the parlor or family-room. Side doors lead to the pleasant and shady front balconies. The Parlor and Family-room are of equal size, and may

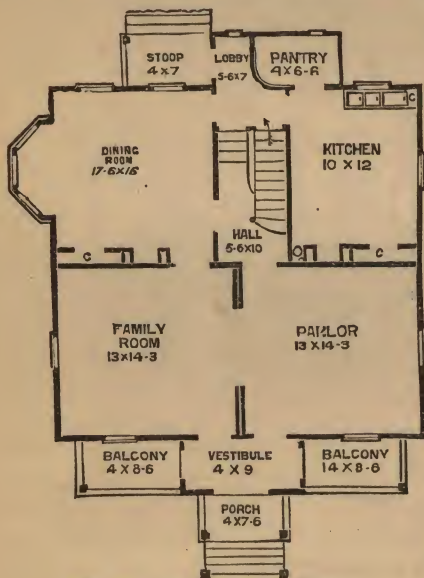


Fig. 90.—PLAN OF FIRST FLOOR.

be used as one spacious apartment by opening the sliding doors. The Dining-room is pleasantly situated, and opens into the family-room, rear entrance, and hallway. It has one large bay-window, and two plain ones, an open fire-place, and a dish or china closet, *c*. The Kitchen is isolated, relieving other rooms of its noise and odors, is convenient to the dining-room, cellar-

stairway, and rear entrance, through the rear lobby, and has an open fire-place, closet, and large pantry, range, boiler, sink, wash-tubs, and the necessary pipes for water. The hall is central, accessible from the parlor, dining-room, and rear entrance, and is thoroughly lighted and ventilated by the window at the head of the stairs..... SECOND STORY, fig. 91.)—Height of ceiling, 8 feet. This story contains a hall, four good-sized chambers, with closets, and two windows to each. The Bath-room has bath-

tub and seat. A Conservatory connects through sash doors with the two front chambers.....

Attic, (fig. 92.)

—Height of ceiling, 8 feet. The stairs to this are placed immediately above those to the second story, are ceiled in, with a door at the bottom. The rear portion is

finished on a line with the two chimneys, into two bedrooms and a hall. The front portion is floored, but otherwise left unfinished as an open garret, valuable as a play-room for the children, a clothes drying-room, and many other purposes.

.....CONSTRUCTION. — The Foundation, of hard brick and good mortar, is shown by the *Cellar plan*, (fig. 93.)—It shows four feet above

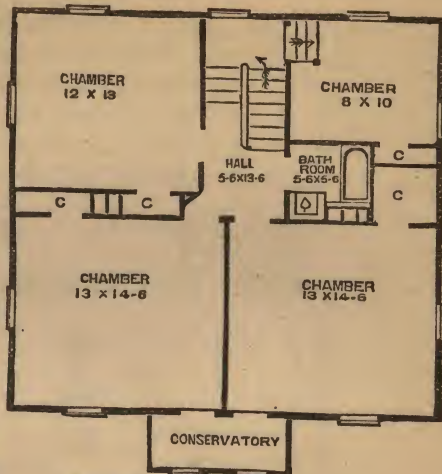


Fig. 91.—PLAN OF SECOND FLOOR

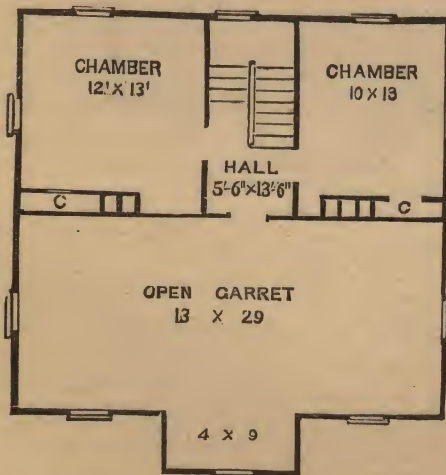


Fig. 92.—ATTIC.

the grade in front, and, if desirable, may show one-half that height in the rear. There is usually sufficient earth taken from the cellar excavations to give such desirable grade as shall turn off all water from the immediate grounds and walks. The chimneys are also of hard brick, are independent of the foundations, and are carried

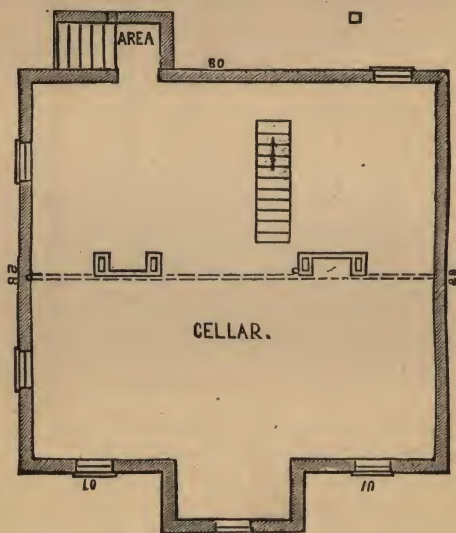


Fig. 93.—PLAN OF CELLAR.

up perfectly plumb to the roof, where they are finished with neat bases and caps. The central position of these chimneys is proof against cold-air openings at their sides, and insures saving the heat radiated from them. It is impossible to prevent cracks from appearing along the sides of chimneys in frame buildings, and when these cracks communicate directly with the outside covering, they often admit much cold air.—The principal frame is 20 ft. high, substantially constructed, as indicated by the upright section (fig. 94). The main plates are in line

with the beams of the attic story, and the roof-purlins are 8 feet above them. The side-rafters are 12 feet long, fitted and spiked to the purlins and plates, with their lower ends extending $2\frac{1}{2}$ feet down from the latter in a continuous line. Rough brackets connecting the rafters with the upright frame-work, forming the foundations or frame of the principal cornice. By this method of extending the rafters downward instead of upward, the desirable height and proportion of roof are obtained. The exposed surfaces that require siding are reduced from the usual height of $22\frac{1}{2}$ feet to 16 feet, and the cornices are more substantial and less complex. The siding, roof-boarding, slating, and trimming are done in the usual manner. The gutters are laid in with the slate, as described in Design V. The hoods and dormer windows have slate coverings, interlaced with the principal roof, with joinings and flashings of sheet-lead. The following estimate provides for the thorough completion of the building in an appropriate and substantial manner.—ESTIMATE :



Fig. 94.—SECTION.

82 yards excavation, at 20c. per yard.....	\$16.40
16,000 brick, furnished and laid, at \$12 per M.....	192.00
44 ft. stone steps, coping, etc., at 30c. per ft.....	13.20
750 yards plastering, at 28c. per yard.....	210.00
3,497 ft. timber, at \$15 per M.....	52.45
1 sill, 4×8 in. 116 ft. long.	1 perline, 3×7 in. 96 ft. long.
1 girt, 4×8 in. 30 ft. long.	48 beams, 2×8 in. 14 ft. long.
11 posts, 4×7 in. 19 ft. long.	24 beams, 2×8 in. 18 ft. long.
1 tie, 4×6 in. 146 ft. long.	27 beams, 2×8 in. 15 ft. long.
1 plate, 4×6 in. 138 ft. long.	1 stoop, 3×7 in. 70 ft. long.
30 rafters, 3×4 in. 13 ft., at 16c. each.....	4.80
380 wall-strips, at 11c. each.....	41.80
200 siding, 10-inch, at 26c. each.....	52.00
Materials in cornices and corner-boards.....	50.00
261 hemlock roof-boards, at 16c. each.....	41.76
19 squares of slating, at \$9 per square.....	171.00
8 squares of tinning (I. C. charcoal), at \$7 per square.....	56.00
250 ft. gutters and leaders, at 8c. per ft.....	20.00
300 flooring, 9×1½ in., at 26c. each.....	78.00

200 lbs. felting, at 3c. per lb.....	\$6.00
3 stairs, complete.....	75.00
Porch, balconies, and stoops, complete.....	160.00
6 cellar windows, \$36; 1 bay window, complete, \$60.....	96.00
12 plain windows, \$144; 9 hooded windows, complete, \$135.....	279.00
8 dormer windows, complete, at \$8 each.....	64.00
32 doors, at \$9.50 each, \$304; 7 closets, complete, \$14.....	318.00
3 marble mantles, \$60; 3 marble shelves, complete, \$18.....	78.00
Range and plumbing, complete.....	188.09
Well, from bath-room to roof, complete.....	15.00
Gas-pipes for 18 lights, complete.....	40.00
Bells and speaking-tubes, complete.....	20.00
Finish of part of attic, complete.....	60.00
Nails, \$24; cartage, average 1 mile, \$25.....	49.00
Carpenter's labor, not included above.....	150.00
Painting, 2 coats, complete.....	150.00
Incidentals.....	52.50
Total cost, complete.....	\$2,800.00

DESIGN XXIII.

A COUNTRY OR VILLAGE HOUSE, COSTING \$2,800.—
FOR PHYSICIANS, LAWYERS, CLERGYMEN, JUSTICES,
NOTARIES, EDITORS, ETC.

This plan is designed to meet the wants of a large class residing in the country, or smaller villages, who are not only directly interested in agricultural pursuits, but who have also some professional or official vocation, such as : Physicians, Lawyers, Justices, Notaries, Clergymen, etc. They require in connection with their residences an apartment adapted to their special callings, that shall in no way interfere with their domestic arrangements, where all persons making business calls may enter without feeling that they are intruding on the privacy of the household..... ELEVATION, (fig. 95.)—The exterior outlines and dress of this plan are a fair representation of the prevailing styles of American rural house architecture, in its most genteel and practical forms. There is a manifest propriety in the strong and decided features of the exterior finish of this example, wherein each part has its distinctive characteristics of utility, harmony, and truthful-

ness—a combination that never fails to please even the most tasteful, and it may therefore be regarded as the real basis of beauty. We frequently meet with oddly-proportioned country houses, evidently constructed with a sole regard to utility, that present a stunted and cadav-



Fig. 95.—ELEVATION OF HOUSE, WITH OFFICE ATTACHED.

erous appearance, having been shorn of their beauty through a mistaken idea that *economy* precludes the least indulgence in taste. Good taste only demands that every separate part of any building shall be in harmony with the whole, and this feature of harmony is not so much a subject of expense as of expression, being a result of *mode* rather than the *matter* of construction. The materials necessarily required for any building assume shape and

expression according to the methods of their application, and they may be applied in disproportion, so as to be of permanent disgrace; whereas the same materials properly and intelligently used, with a like expense of handling, develop into proportionate and expressive forms of elegance and grace. A building constructed as indicated by these plans presents a pleasing appearance from any direction, each face being broken by wings or other pro-

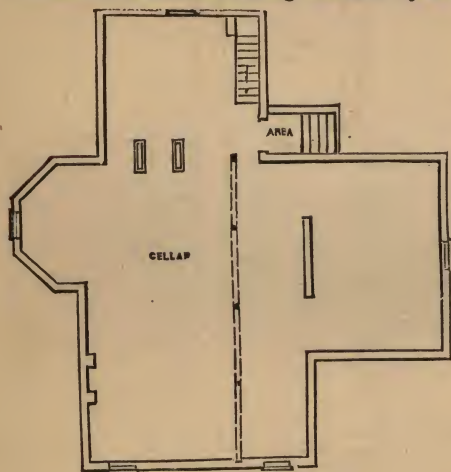


Fig. 96.—PLAN OF CELLAR.

jections, which give relief from the formalities of a large, flat surface. From the front there is an expression of completeness indicating full provision for comfort, and an air of contentment. From the sides are presented to the best advantage the more ex-

tended surfaces, including the large corniced gables of the principal building, the rear wing, and other projections. The rear has an equally finished and satisfactory appearance..... THE CELLAR (fig. 96), is the full size of the ground-plans, with a clear height of 7 feet. The five cellar windows are placed where they will admit light to every part. An outside entrance is under the rear lobby, and a stairway leads directly to the kitchen..... FIRST STORY, (fig. 97.)—The arrangement is very simple and convenient, comprising good-sized hall, parlor, living-room, kitchen, office, study, five closets, and two stair-

ways, with ceilings 10 feet high. The Parlor is pleasantly situated, has two front windows opening directly to the piazza, from which they derive shade and protection. The Dining or living-room opens into the hall, parlor, and kitchen, and has two closets. One end of this room is octagonal, and extends 6 feet beyond the face of the principal, with three windows, affording a pleasant outlook. The Kitchen adjoins the dining-room, has two closets, is fitted up with a range, sink, and wash-tubs, and is conveniently connected with the cellar and with second story by private stairways. The Office is entered from the front porch, and is in direct communication with the principal hall, has a good-sized closet from the space

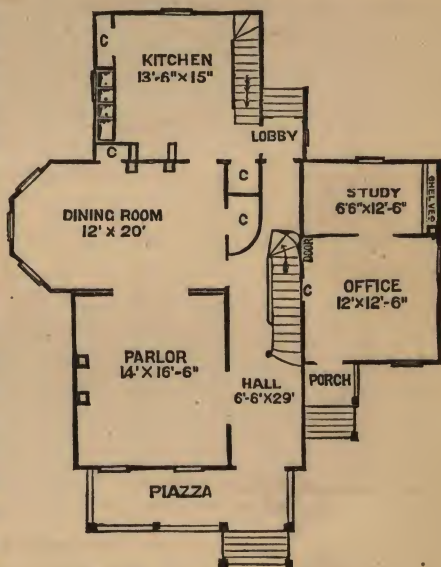


Fig. 97.—PLAN OF FIRST FLOOR.

under the principal stairs, and has a private room or Study.... SECOND STORY, (fig. 98.)—This is divided into four commodious apartments, beside a hall, bath-room, and the necessary closets, and has ceilings 8 feet high in the main building, and 7 feet in the rear wing. The Bath-room is provided with a seat-closet and bath-tub. An inclosed stairway leads to the Attic, where two or more bedrooms may be finished, besides leaving space for

garret purposes. The tank placed over the ceiling of the bath-room is arranged to receive water from the principal roof, and is provided with an overflow pipe leading to the cistern..... GENERAL REQUIREMENTS.—Full brick foundations are estimated for. Where coarse stone can be had, they answer as well, and at less cost, for the portions below ground; they should be laid even with the brick-work on the inside when finished. The wood-work



Fig. 98.—PLAN OF SECOND FLOOR.

is to be substantially constructed of good and sufficient materials throughout. The roofs of the piazza, stoop, bay, lobby, and window caps, are covered with charcoal tin, and in each case an allowance is made for a "flashing" of 6 inches in width to turn up behind the siding, to prevent leakage. The principal and the two wing roofs are each covered with dark slate with ridge plates of zinc. The gutters are to be those described for Design V. The joinings of the wing-roofs against the main building are made perfectly tight by laying in, against the building, right angle strips of zinc

or tin "flashing," with each course of slate before the siding is put on. Slate is unquestionably the best material for such roofing when the form of roof will admit of its use; its cost is the same as for good tinning, and about 2 cents per square foot in excess of pine shingles; when once properly done, will last for centuries; it is fire-proof, and the water from it is much purer, an important consideration when rain and cistern water is used for cooking or drinking. Its color and appearance are agreeable—in fact roofs of other materials are often

painted in imitation of slate from choice. . . . The most expressive portions of any buildings are their projecting cornices. As a rule, for houses of this style, such projections should be *one inch for every foot of their height from the foundation*. And the same rule will apply to every detail of the exterior finish; for example, as in this case, the principal building being 22 feet high at the plate, the principal cornices should project 22 inches; the piazza being 11 feet high, its cornice projects 11 inches; the windows, 6 feet high, have caps projecting 6 inches, etc. By this simple rule, all such projections may be readily determined, and thus secure perfect proportion and harmony of parts. . . . The inside plastering is "three-coat work." All side-walls should be continued down *close* to the floor, to prevent the passage of air or sound. Care should be taken to make the walls straight and true, with the second coat of "browning," for the last or white coat, though applied in the best manner, can never overcome malformations in the body of the plastering; on the contrary, the finer the finish of last coat, the more visibly will such defects appear. In the concluding estimate, 28 cents per yard is allowed for the cost of plastering, which is ample, as shown by these calculations *for 100 yards*, viz. :

2,000 lath, at \$2 per M.	\$4.00
10 lbs. lath-nails, at 6c. per lb.	60
4 barrels lime, at \$1 per barrel.	4.00
5 loads sand, at 30c. per load.	1.50
1 barrel finishing lime, at \$1.40 per barrel.	1.40
1½ bushel plaster, 37c.; 1 bushel hair, 50c.	87
Cartage.	3.00
Labor putting on lath, at 10c. per bunch.	2 00
½ day laborer (mixing mortar), at \$1.50 per day.	75
1½ days mason (work), at \$2.50 per day.	3.75
1½ days laborer ("tending" mason), at \$1.50 per day.	2.25
Use of screen, water barrel, and scaffolding.	1.00
Total cost for 100 square yards, complete.	\$25.12
Incidentals.	2.88
Estimated at 28c. per yard.	\$28.00

In some localities, a practice prevails among masons of including in their measurements of plastering one-half of the openings of doors and windows, which is obviously

unjust, and a frequent cause of dispute. Such openings will average at least 2 yards each—in this house would aggregate 50 yards—and in every case should be deducted, unless otherwise agreed previously.—ESTIMATE:

113 yards, excavation, at 20c. per yard.....	\$22.60
12,000 brick, laid complete, at \$12 per M.....	144.00
47 ft. stone steps and coping, at 30c. per ft.....	14.10
841 yards plastering, at 28c. per yard.....	235.48
5,135 ft. timber, at \$15 per M.....	77.02
1 sill, 4×8 in. 200 ft. long.	
1 girder, 4×8 in. 30 ft. long.	
7 posts, 4×7 in. 21 ft. long.	
2 posts, 4×7 in. 18 ft. long.	
2 posts, 4×6 in. 12 ft. long.	
Piazza, 3×8 in. 82 ft. long.	
Piazza, 3×5 in. 40 ft. long.	
Plates, 4×6 in. 100 ft. long.	
Ties, 4×6 in. 330 ft. long.	
1 ridge, 3×7 in. 26 ft. long.	
20 rafters, 3×5 in. 20 ft. long.	
35 beams, 3×8 in. 22 ft. long.	
9 beams, 3×8 in. 19 ft. long.	
21 beams, 3×8 in. 13 ft. long.	
4 locust posts in cellar, at 30c. each.....	1.20
375 wall-strips, 2×4 in. at 11c. each.....	41.25
170 lbs. tarred paper or felting, at 3c. per lb.	5.10
330 siding, 10-inch, at 28c. each.....	92.40
Materials in cornices, water-table, etc.	50.00
213 hemlock boards (for roofing), at 20c. each.....	42.60
18½ squares slate roofing, at \$9 per square.....	166.50
3 squares tin, at \$8 per square.....	24.00
300 flooring, 9 in., at 28c. each.....	84.00
Stairs, complete.....	100.00
5 cellar windows, complete, at \$6 each.....	30.00
18 plain windows, complete, at \$12 each.....	216.00
35 doors, complete, at \$10 each.....	350.00
Piazza, porch, and lobby, complete.....	150.00
4 mantles, complete, at \$20 each.....	80.00
Closet finish, complete.....	25.00
Range and elevated oven, etc., complete.....	80.00
Plumbing, complete.....	175.00
Bells and speaking-tubes, complete.....	15.00
Nails, \$25; painting, \$200; carting, \$35.....	260.00
Carpenter's labor, not included above.....	223.83
Incidentals.....	94.92
Total cost, complete.....	\$2,800.00

DESIGN XXIV.

A FARM-HOUSE COSTING \$2,800.

This plan will be recognized as comprehending the general characteristics of those given in Designs XXI. and XXVI. It is designed to be constructed of similar materials, with a like variety of pleasing and decided outlines, and to give an equal amount of accommodation and convenience. The division and arrangement of the sev-

eral parts, however, are entirely changed, being especially intended to meet the requirements of a location having a *western* frontage. Location is an important consideration, involving many questions of adaptation, that should always guide to the selection of such a plan as will express a natural fitness for the situation, and truthfully indicate its purpose..... EXTERIOR, (fig. 99.)—Only two



Fig. 99.—ELEVATION OF FARM-HOUSE.

feet of the foundation-walls are exposed to sight, which brings the frame-work of the building quite near enough to the ground. The surface of the earth surrounding such buildings should have a grade of *at least* one-half inch to the foot, for the distance of 50 feet in every direction, to insure the turning away of all surface water from the walks and grounds. Another good result derived from such grade is the additional altitude given to the building, imparting a much better appearance. The general outlines of the elevation are very simple, devoid

of all pretentious ornamentation. The wide frontage, the large and numerous openings, and ample roofs, are each expressive of frankness and hospitality, eminently befitting the home of the farmer. The front Porch is unusually wide, and arranged to have large columns, and stationary seats at either side. The Bay-window has square projections, instead of octagonal, which are equally appropriate in this case, and less costly. The cornices of the principal building project 20 inches, and those of the wing 16 inches, and both are provided with scroll-sawed trusses. The chimney-tops are large, and heavily capped. The same general finish, as is shown on the front, is put



Fig. 100.—PLAN OF CELLAR.

on the sides and rear, so that the building presents an equally complete and satisfactory appearance from every direction.

Buildings of this character should

be set back from the street line at least 50 feet—150 feet would be much better—to give room for trees, shrubbery, and walks..... CELLAR, (fig. 100.)—The plans provide for a cellar under the principal building only, which gives a clear space of 22×25 feet. If desired, the space beneath the wing may be included at an additional cost of \$65. The excavations for the cellar in the earth is 3 feet 8 inches deep; this allows the foundation-walls to be 7 feet high. The earth thrown out is to be graded around the building to the height of $1\frac{1}{2}$ foot, thus leaving two feet of the foundation exposed on the outside. Country houses are frequently set so low down as to be a matter of regret ever afterwards. There are constant accumulations of dust, and other matter, caught and held by the

shrubby and grasses, so that there is soon discovered a seeming growth of the earth upward around the house and immediate grounds, making it impossible to adapt the grades that are desirable. It is far better that foundations are a little too high than too low, for when too high, the approaches can easily be raised at any time with a few loads of earth; but when too low, there seems to be no cure, except to raise the entire building. The foundation-walls are designed to be constructed of broken stone, laid in coarse mortar, as more particularly described for Design XXI. FIRST STORY, (fig. 101.)—Hight of ceilings, 10 ft.

Entire floor measurement, 1,206 square feet, affording ample space for good-sized apartments. The several divisions have especial regard to

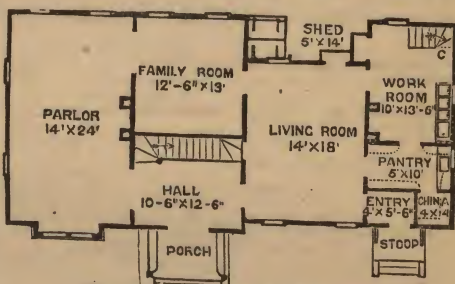


Fig. 101.—PLAN OF FIRST FLOOR.

comfort and convenience. The front hall, or reception room, is nearly square, of good dimensions, is entered from the front porch through double or folding doors, and adjoins the parlor and living-room, and contains the principal stairs. The Parlor is unusually large, is provided with windows in its sides, and has stucco cornices and centers in its ceilings, with an arched finish in the bay-window. The Living, or Dining-room, is commodious, pleasantly situated, with outlooks front and rear, and is easily accessible all around. The Family-room is large, connects with the dining-room and parlor, and is intended as a sitting or sewing-room. If occasion require, this room might be used as the bed-room of an invalid. The Work-room, or Kitchen, is conveniently

arranged to have a range, boiler, pump, sink, wash-tubs, and pipes for cold and hot water, and adjoins the dining-room, a large pantry, and a rear entrance door, and has a private stairway leading to the second story, with a closet underneath. The Pantry is of ample dimensions, is conveniently arranged with shelving, and has a zinc wash-tray, with cold and hot water-pipes, and adjoins the kitchen, dining-room, and a china closet. The latter is useful for storing wares not required daily. The rear shed is paved, and the cellar doors are constructed as described for Design XXI.... SECOND STORY, (fig. 102.)—

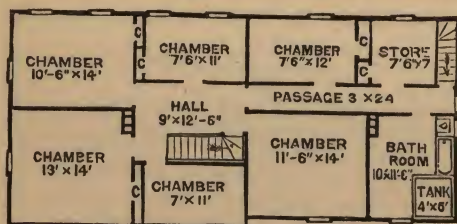


Fig. 102.—PLAN OF SECOND FLOOR.

Hight of ceiling, 9 feet in main building, and 8 feet in wing. Floor measurement, 1,276 feet, divided into 8 good-sized rooms, besides halls, closets, and stairways. The principal hall connects with each chamber in main building, and one room and passage in wing. The door between the principal hall and wing-passageway may be closed at any time, cutting off communication at pleasure. The side, or "breast" walls, in the wing, are vertical 3 feet, and are continued upward at an angle of 45° to the ceiling, thus securing sufficient head-room. The bath-room is exactly above the kitchen, and contains a tank, bath-tub, and seat-closet, with pipes for cold and hot water.... ATTIC.—The stairs to this are over the first flight, and are designed to be neatly ceiled in with 4 1/2-inch beaded ceiling-boards, with a door at the foot. Double windows in each gable admit sufficient light, and afford ventilation.... REMARKS ON CONSTRUCTION.—An insight into the character of this plan, is best had by carefully consid-

ering the materials and cost in the estimate added. We would urge the importance of good methods and workmanship in construction, without which all materials, however good or sufficient, can never produce good results. The old maxim, "whatever is worth doing at all, is worth doing well," especially applies to building a home in which one is to spend a lifetime. This does not imply extravagance in any sense, only demanding such *careful and intelligent application of the ordinary rules of construction*, as shall insure substantial work, that will not be a continuous source of anxiety and expense. Any one of ordinary intelligence should be able to generally superintend the operations of the mechanics employed in constructing a farm-house. The following *points* are of the greatest importance. Carefully watch that the foundation-walls are substantially laid, and accurately leveled on their upper surfaces, so that the doors shall not strike the floor or carpets in opening, nor the tables, chairs, or other furniture be obliged to stand on three legs. The frame-work, when raised, should be plumb, so that all work on or in the building can be cut square, and applied without tedious fitting. The siding should be thoroughly "seasoned" in the open air before using, and carefully applied with close joints, and well nailed. The edges of all water-tables, corner-boards, and window-frames should be painted *before* setting. The shingles should be carefully laid, breaking their joints at one-third of their width, and double nailed. The flooring should be dry, close laid, and nailed with two nails to each beam. The partitions should be set with studding of selected widths; and their angles or corners should be anchored firmly together, to prevent the walls from cracking in those parts when finished. The chimneys should be carefully constructed; all joints between the brick-work should be surely filled with mortar, to prevent sparks from passing through to the frame-work. All mortar for

ry

plastering should be properly mixed, and allowed sufficient time (at least one week), for the thorough slaking of the lime, and a complete permeation of its caustic properties. Thin coats of plastering are better than heavy ones. A mortar that does not crack in setting or drying is sure to be good. The interior wood finish should not be commenced until the plastering is completely dried out, and all loose mortar is removed from the building. All wood-work usually painted should be primed as soon as in position. For more explicit remarks and sundry suggestions on painting, see Design XIII.

ESTIMATE OF MATERIALS AND COST :

110 yards excavation, at 20c. per yard.....	\$22.00
1,371 ft. stone foundation, at 15c. per ft.....	205.65
3,000 brick, furnished and laid, at \$12 per M.....	36.00
46 ft. stone steps, sills, and coping, at 30c. per ft.....	13.80
1,030 yards plastering, complete, at 28c. per yard.....	288.40
5,713 ft. timber, at \$15 per M.....	85.69
1 sill, 4×8 in. 186 ft. long.	
6 posts, 4×7 in. 21 ft. long.	
3 posts, 4×7 in. 14 ft. long.	
1 tie, 4×6 in. 256 ft. long.	
1 plate, 4×6 in. 186 ft. long.	
2 girts, 4×8 in. 25 ft. long.	
57 beams, 3×8 in. 25 ft. long.	
36 beams, 3×8 in. 13 ft. long.	
24 beams, 3×8 in. 11 ft. long.	
3 valleys, 3×8 in. 20 ft. long.	
24 rafters, 3×5 in. 16 ft. long.	
100 joist, 3×4 in. 13 ft. long, at 16c. each.....	16.00
300 wall-strips, 2×4 in. 13 ft., at 11c. each.....	33.00
Materials in water-table and cornices.....	50.00
300 novelty siding-boards, 9½ in., at 28c. each.....	84.00
400 shingling-lath, at 6c. each.....	24.00
69 bunches shingles, at \$1.50 per bunch.....	103.50
84 ft. gutters, 133 ft. leaders, and 134 ft. porch roofs, 10c. per ft.....	35.00
355 flooring, 9½×13, at 28c. each.....	99.40
Porch and hood, complete.....	75.00
Stairs, complete.....	90.00
Bay-window, complete.....	60.00
20 windows, complete, at \$10 each.....	200.00
6 cellar windows, complete, at \$6 each.....	36.00
4 dormer windows, complete, at \$20 each.....	80.00
32 doors, complete, at \$10 each.....	320.00
1 cellar door and hatchway doors.....	20.00
Shelving and hooks in closets.....	20.00
2 marble mantles and 4 shelves with trusses.....	75.00
Range and plumbing, complete.....	215.00
Nails.....	25.00
Bells and speaking-tubes.....	20.00
Painting.....	150.00
Cartage, 1 mile.....	35.00
Carpenter's labor, not included above.....	250.00
Incidentals.....	32.56
Total cost, complete.....	\$2,800.00

DESIGN XXV.

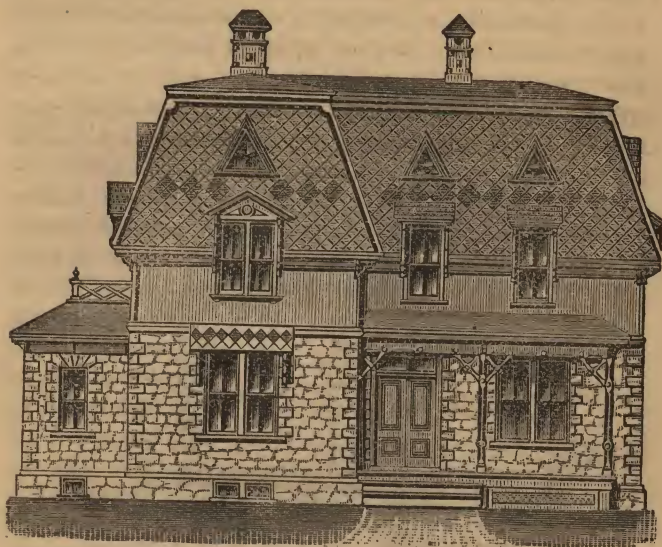


Fig. 103.—FRONT VIEW OF HOUSE.

A "HALF STONE" HOUSE FOR \$2,800.

This plan is designed for a substantial, convenient, and inexpensive country house. It has two full finished stories, with well-lighted apartments of good size, and a large cellar and attic. It has also the merit of architectural beauty, well adapted to a commanding location.... EXTERIOR, (fig. 103.)—The "half-stone" composition of the side walls, and the strong outlines and slating of the main roof, give to this structure a rustic, yet substantial appearance, affording both diversity and picturesqueness, as shown in the variety of the openings and irregularity of the several parts. The front and rear elevations are similar; by changing the entrance doors and stairs, either

side may front the road. The details of exterior finish are so simple, and easy of execution, that any "modification for the rear" is undesirable. Inharmonious and unsightly curtailments in the rear finish have a depressing influence on those obliged to face them daily, which can never be overcome by knowing there is a good front.....

CELLAR, (fig. 104.)—Height, $6\frac{1}{2}$ feet, of which $4\frac{1}{2}$ feet is below the ground surface, and therefore (with its

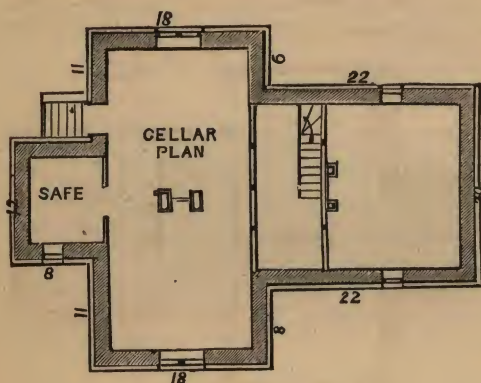


Fig 104.—PLAN OF CELLAR.

thick walls), frost proof.

It is always important to provide for carrying off the poisonous vapors apt to be generated in cellars. For this purpose side openings are made near the ceiling in-

to one of the flues of each chimney. These flues, extending to the top, and warmed by contact with the fires of the upper stories, have sufficient draft to constantly change the cellar air, and prevent its ascent through the living-rooms.... FIRST STORY, (fig. 105.)—Height of ceilings, 10 feet. Here are conveniently placed three large rooms, a hall, china closet, and large pantry. Each large room has commodious windows with views in two directions. The pleasant piazzas at both the front and rear of the parlor, extend over and protect the entrance doors. . . . SECOND STORY, (fig. 106.)—Height of ceilings, 8 feet. The divisions are very simple, a hall, four chambers, four closets, and a bath-room. Light railings may be put on

the roofs of the wings and piazzas to form pleasant balconies to the windows of this story. One such balcony is shown over the wing-roof (fig. 103); the others may be similar. The small cost of these devices is fully repaid in their usefulness for airing purposes, besides imparting a cheerful appearance.... GARRET OR ATTIC.—This story is thoroughly floored, but otherwise unfinished. Should additional chambers be required, partitions may be set over those or the second story, duplicating that plan, with rooms having the same height of ceilings. The stairs are placed im-

mediately above those of the lower stories, are ceiled in, and have a door at the foot.... CONSTRUCTION.—The durability, general abundance, and substan-

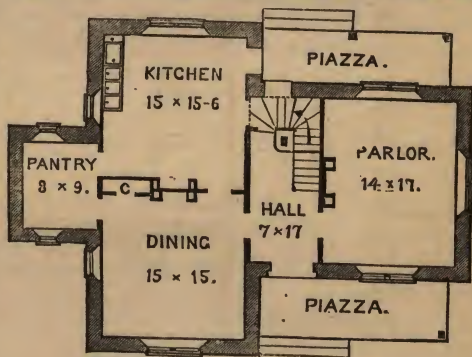


Fig. 105.—PLAN OF FIRST FLOOR.

tial appearance of stone, make it the most desirable and appropriate material known for the exterior walls of any building. The cost of cutting and dressing such material ready for use is the principle barrier to its general adoption. By using bricks for corners and for the finish around the openings, the most expensive item of stonework is saved. They need only to be "random dressed," and laid nearly in the shape in which they are quarried, as more particularly described for Design XXVII. When such walls are carried beyond the height that is convenient for the handling of the materials, the expense of their construction is largely increased. It is for this reason that the "half-stone" method is particularly val-

uable. In this plan, the stone-work extends only to the height of the ceiling of the first story; to this height the materials may be readily wheeled on trestled scaffolding, while to double this height would require the use of the tedious derrick, and additional help. The upper stories are framed of the usual sized timber, and raised on the stone walls, which in this case become their foundation. The main roof is constructed as shown in Design XXII. The height requiring siding is $4\frac{1}{2}$ feet, or including water-table and cornice, $6\frac{1}{2}$ feet from the stone-work of the

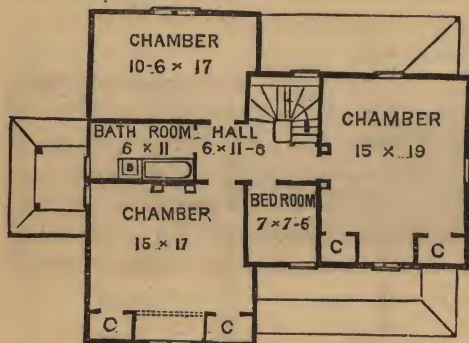


Fig. 106.—PLAN OF SECOND FLOOR.

first story to the slating of the roof. The main roof covering is of dark slate laid on tarred felt. At or near the floor-line dividing the upper stories, it is appropriate to indicate the division by the use of tinted slate, which may be laid in close courses or in simple figures, as shown on the elevation. The roofs of the hooded and dormer windows are also slated. The deck of the main roof, and the roofs of the piazza, are covered with I. C. charcoal tin. The wood-finish is made of simple design, devoid of all efforts at pretentious display, each part being chosen with especial regard for its utility and appropriateness. The trusses, piazza-columns, and soffits are worked of timber neatly stop-chamfered, imparting a rustic appearance to them, in keeping with the stone-work. The water-tank is placed in the attic, directly above and in line with the bath-tub and kitchen-range, favoring the most practical

first story to the slating of the roof. The main roof covering is of dark slate laid on tarred felt. At or near the floor-line dividing the upper stories, it is appropriate to indicate the di-

plumbing. The soil-pipe leading from the bath-room floor passes down through the closet adjoining the kitchen chimney to the sewer-pipe, which is laid below the cellar bottom. The bad smells and gases arising from confined sewage may be easily disposed of by the insertion of a 2-inch pipe into the closet-trap (at its highest point), and connecting it with a flue of the adjoining chimney. All inside plastering is of three-coat work. The casing of the bath-room and around all plumbing is in hard-wood; all other trimming of clear pine. The Newel rail and baluster on the first-story flight of stairs are of black-walnut. All work usually painted has two coats of best lead and linseed-oil, with stainers to give the body (outside), a light gray, and trimmings in imitation of "Nova Scotia stone." Inside, parlor and hall, in grays, dining-room in grays and drabs, kitchen in drabs, chambers white.... Cost.—Prices of building materials are quite as low as they were before the war; many kinds are really selling for the cost of their production or manufacture. Labor is also very cheap, nearly at old figures. Those contemplating building, and having the means at hand to do so, need not wait for a more favorable time. As soon as general business improves, there must be a "rise" in materials, especially such as require to be manufactured. The estimate appended includes the cost of all materials and labor for good work at the prices now ruling near New York city.—ESTIMATE OF THE COST:

126 yards excavation, at 20c. per yard.....	\$25.20
158 perches stone-work, at \$2.75 per perch.....	434.50
91 ft. stone stills and steps, at 30c. per ft.....	27.30
7,000 bricks in angles and chimneys, at \$12 per M, laid.....	84.00
750 yards plastering, at 25c. per yard.....	210.00
4,262 ft. of timber, at \$15 per M.....	63.93
2 girders, 4×8 in. 18 ft. long.	1 sill, 3×8 in. 175 ft. long.
3 girders, 4×8 in. 10 ft. long.	1 plate, 4×6 in. 175 ft. long.
16 beams, 3×8 in. 16 ft. long.	1 deck, 3×7 in. 150 ft. long.
32 beams, 3×8 in. 18 ft. long.	5 beams, 3×8 in. 9 ft. long.
12 beams, 3×8 in. 22 ft. long.	4 beams, 3×5 in. 20 ft. long.
16 beams, 3×8 in. 24 ft. long.	
340 wall-strips, at 11c. each.....	37.40
100 furring strips, at 6c. each.....	6.00
Cornice materials.....	40.00
75 siding boards, at 26c. each.....	19.50
357 hemlock boards, at 16c. each.....	57.12

18 squares of slate, complete, at \$9 per square.....	\$162.00
14 $\frac{1}{2}$ squares of tin, complete, at \$7 per square.....	101.50
350 flooring plank, 8 inch, at 25c. each.....	87.50
2 piazzas, complete, at \$70 each.....	140.00
7 cellar windows, complete, at \$5 each.....	35.00
14 plain windows, complete, at \$8 each.....	112.00
11 hooded windows, complete, at \$15 each.....	165.00
8 dormer windows, complete, at \$8 each.....	64.00
Stairs, complete.....	80.00
23 doors, complete, at \$9 each.....	207.00
3 mantles, complete, at \$25 each.....	75.00
Closet finish, complete.....	20.00
Range and plumbing.....	175.00
Nails, \$25; painting, \$70; cartage, \$20.....	115.00
Carpenter's labor, not included above.....	150.00
Incidentals, attic and elsewhere.....	106.05
Total cost, complete.....	\$2,800.00



DESIGN XXVI.

A FARM-HOUSE COSTING \$2,900.

This plan of a farm-house embraces a commodious and convenient interior, with such external features as to clearly express its purpose. It will be recognized as at once adapted to rural situations and domestic life, providing much valuable space, and affording a variety of pleasing and symmetrical outlines, with due economy in expense of construction. Perhaps the most striking feature is the *breadth* of the front, which is 51 feet. (The average depth is 22 feet 7 inches.) As far as practicable, all prolonged vertical lines are avoided, leaving horizontal ones to prevail, as of more practical utility and value. Where opportunities abound for "spreading out," as in the country, it would be obviously incompatible to build tall, or stilted houses, that would not comport with their surroundings, nor provide the conveniences desirable in all rural habitations.... ELEVATION, (fig. 107.)—The general details of the elevation are made up of simple parts so appropriated and balanced, that they harmonize with each other, and secure a graceful outline. The principal, or main portions of this building will be ob-

served to be the central one, while the wings at either side are collaterals, that give equipoise and rest to the

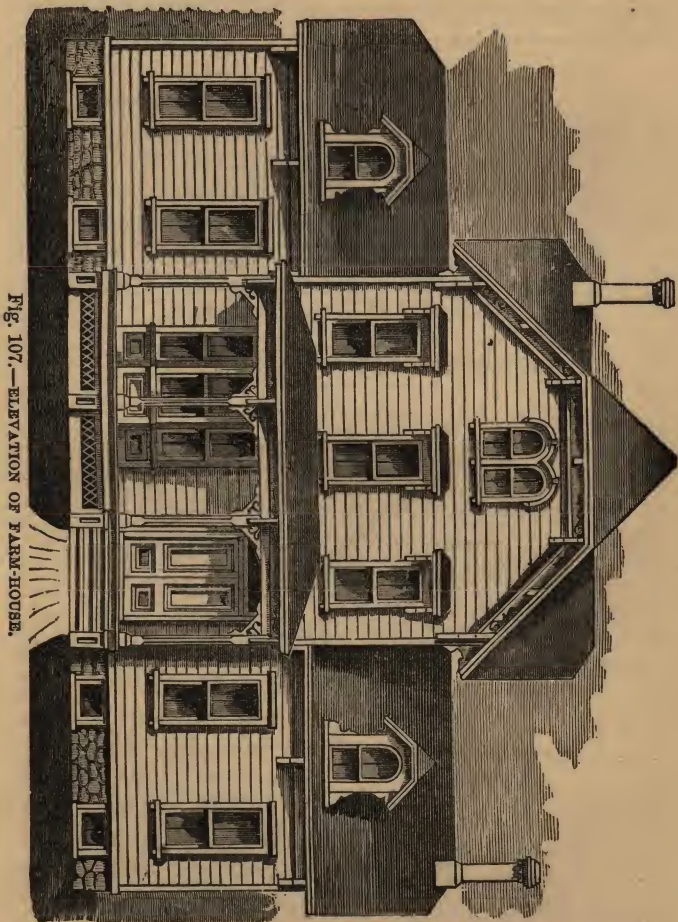


FIG. 107.—ELEVATION OF FARM-HOUSE.

whole structure. The steep roofs, with their subdued pediments, and spreading cornices and dormers, the bay and other windows, the wide entrance, and open piazza,

are all arranged so as to correspond with each other, producing an effective and picturesque appearance. There are no efforts at scientific or elaborate display of outside ornamentation, but has sufficient architectural complete-

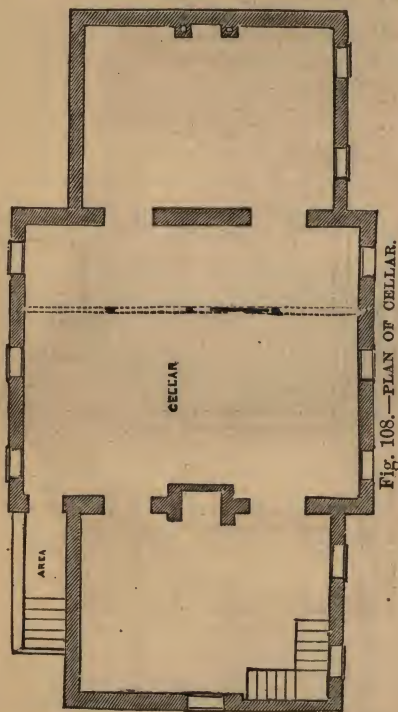
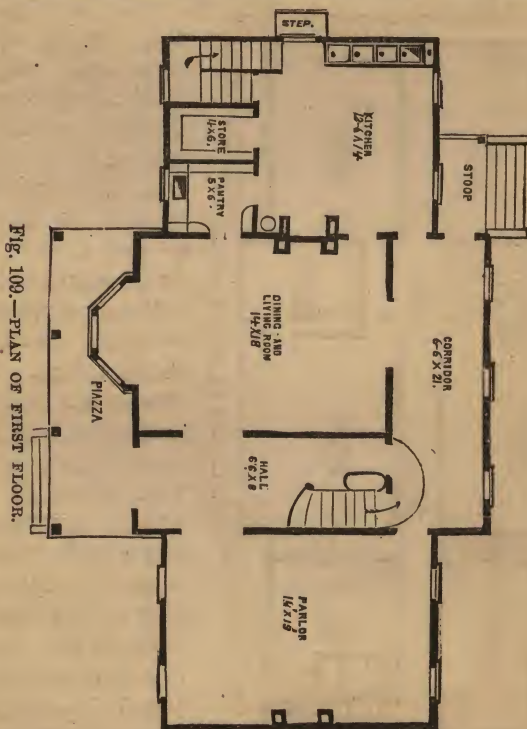


Fig. 108.—PLAN OF CELLAR.

ness to denote social cultivation and refinement. The farmhouse in XXI. was designed more especially for an *eastern* frontage. These plans are particularly adapted for a *southern* frontage.... The CELLAR, (fig. 108), extends under the whole house, and is 6½ feet deep. An outside entrance and area are to be built and inclosed under the stoop at the rear. Eleven small windows are provided for both light and ventilation.... The FIRST STORY, (fig. 109), has ample

apartments adapted to the uses of a large family, embracing a good-sized hall, parlor, living-room, kitchen, pantries, closets, and corridor. The principal entrance is from the piazza, through large double doors to the hall. Similar double doors on each side of the hall lead to the parlor and dining-room. These inside double doors enable one to throw the whole together for large family and other gatherings, and are manifestly appropriate in dwell-

lings of this character. The principal stairs are semi-circular, so arranged as to occupy but little room in the principal hall. The Parlor is situated by itself, remote from the machinery of daily housework. The Living-



room is the most central, and most convenient and comfortable room in the house. It is so surrounded by other apartments that summer's heat, nor winter's cold, can have direct access to its sides. The large Bay-window affords an ample supply of light, and adds to the area of the room. It adjoins and opens into the principal hall, corridor, kitchen, and large pantry. The Kitchen is con-

veniently situated, and adjoins the dining-room, corridor, pantry, store-room, cellar, and private stairway. It is provided with a range, sink, wash-tubs, and pipes for cold and hot water. By this arrangement, the principal work of the family can be done with such thoroughness

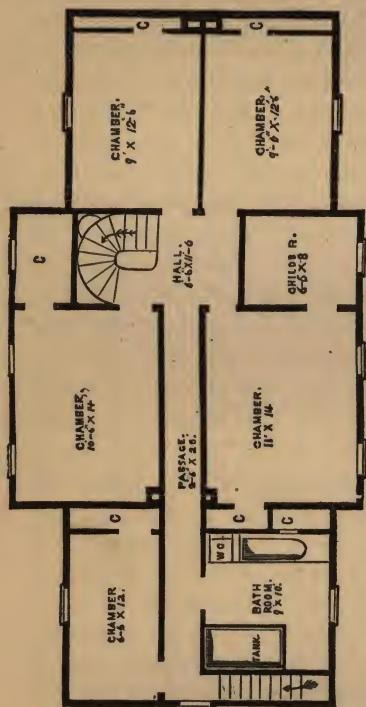


Fig. 110.—PLAN OF SECOND FLOOR.

and facility as to make such employment interesting and pleasant, devoid of any sense of drudgery. The corridor is adapted to all the uses of a rear hall, and communicates with each of the other principal rooms of the first story. It is also an auxiliary apartment, and may be used in connection with either of the other apartments, and affords valuable room for many indoor occupations for both old and young. . . . SECOND STORY, (fig. 110.)—The engraving is sufficiently

plain to require but little explanation. It will be seen that there are seven rooms, besides halls and closets. The Bath-room is situated in this story over the kitchen, and contains the bath-tub, seat-closet, and water-tank, and is accessible from the principal building through the passage leading from the principal hall. An opening through the ceiling of the kitchen, with a register, would

probably let warm air enough up into the bath-room to keep frost out in winter, especially if some fire remained in the range or stove most of the night. In all arrangements of water-tanks and pipes, care must be taken to keep them from being frozen in the coldest nights..... The ATTIC is completely floored over, but is otherwise unfinished. Several bed-rooms might be finished in this story if desirable. An open attic is always valuable for storage, drying clothes in stormy weather, etc., and as a play-room for children in rainy weather..... CONSTRUCTION.—Any one at all familiar with building would see at a glance that the form and arrangements of this plan admit of its execution in section. There are conditions that would justify the building of the central part of this house, to be used as the residence of a small family, and add the wings at any future time, as circumstances might indicate.... The excavations for the cellar are made $3\frac{1}{2}$ feet deep. The foundations are 18 inches thick, and $6\frac{1}{2}$ feet high, of broken stone, laid in mortar, with the joints neatly pointed on all surfaces exposed to sight. The earth thrown out of the cellar should be left on the ground, and graded around the foundation, leaving but two feet to show above the final grade. The chimneys should be started with the principal foundation, and the materials interlaced to insure solidity. Three fire-places are constructed in the first story; those in the kitchen and dining-room are in one stack built "square up" to the ceiling of the first story. Two separate flues are then continued through the second story, on either side of the passage-way, and are afterwards joined over an arch, and pass through the roof in one solid shaft. The estimate indicates the general character of the work. In these rural dwellings, the siding may be worked without the central groove shown in Design XI. This, though less pleasing to many, would give an expression of less artifice, and more strength.... ESTIMATE.—The follow-

ing estimate will be found correct as to quantity, and ample as to cost. Most farmers have materials and facilities that would enable them to greatly reduce the cost of building by this plan. The items of excavation, foundation, carting, and painting, amount to nearly \$500. Some, or each of these parts, might be satisfactorily done by those engaged on the place :

210 yards, excavation, at 20c. per yard.....	\$42.00
1,750 ft. stone foundation, at 15c. per ft.....	262.50
4,000 brick, furnished and laid, at \$12 per M.....	48.00
50 ft. stone steps and coping, at 30c. per ft.....	15.00
850 yards lath and plastering, at 28c. per yard.....	238.00
4,722 ft. timber, at \$15 per M.....	70.83
2 sills, 4×8 in. 26 ft. long.	4 posts, 4×7 in. 22 ft. long.
2 sills, 4×8 in. 22 ft. long.	8 posts, 4×6 in. 13 ft. long.
4 sills, 4×8 in. 15 ft. long.	2 plates, 4×6 in. 26 ft. long.
2 sills, 4×8 in. 20 ft. long.	4 plates, 4×6 in. 15 ft. long.
5 ties, 4×6 in. 26 ft. long.	1 girt, 4×10 in. 26 ft. long.
5 ties, 4×6 in. 22 ft. long.	4 valleys, 3×8 in. 14 ft. long.
4 ties, 4×6 in. 15 ft. long.	42 beams, 3×8 in. 22 ft. long.
2 ties, 4×6 in. 20 ft. long.	36 beams, 3×8 in. 15 ft. long.
100 joist, 3×4 in. 13 ft. long, at 22c. each.....	22.00
320 wall-strips, at 11c. each.....	35.20
150 lbs. tarred paper, at 5c. per lb.	7.50
325 novelty siding-boards, at 28c. each.	91.00
Materials in cornices and outside casings.....	50.00
375 spruce shingling-lath, at 6c. each.....	22.50
65 bunches shingles, at \$1.50 per bunch.....	97.50
200 ft. gutters and leaders, at 10c. per ft. ..	20.00
Piazza and stoops, complete.....	120.00
324 mill-worked flooring-boards, at 35c. each.....	113.40
4 flights of stairs, complete.....	90.00
1 bay-window, complete.....	50.00
22 plain windows, complete, at \$12 each.....	264.00
4 dormer windows, complete, at \$20 each.....	80.00
11 cellar windows, complete, at \$6 each.....	66.00
35 doors, complete, at \$10 each.....	350.00
2 mantles, complete, at \$20 each.....	40.00
Closets, shelving, etc., complete.....	20.00
Range and plumbing, complete.....	248.50
Painting, \$150; nails, \$20; cartage, \$30.....	200.00
Carpenter's labor, not included above.....	218.00
Incidentals.....	18.07
Total cost, complete.....	\$2,900.00

DESIGN XXVII.

A STONE-HOUSE COSTING \$2,900.

These plans were designed for the substantial dwelling of a farmer in easy circumstances. The outside appearance truthfully expresses its rural and its domestic purpose. The interior accommodations are carefully arranged

for comfort and convenience. The materials and method of construction insure permanency ; with little care, this building would last for many generations. . . . EXTERIOR, (fig. 111.)—The elevation shows that this house was intended for the country—it looks like a farm-house—in fact it would be out of place anywhere else. Its peculiar



Fig. 111.—FRONT ELEVATION.

solid, independent, and home-like character is due to the massive stone walls, large door and window openings, broad and steep slated roof, truncated gables, substantial chimneys, and heavy sheltering eaves, all arranged in simple, expressive, and harmonious combination. All superfluous ornamentation is avoided, as inconsistent with rural simplicity and truthfulness. Vines and creepers will be suggested by the rough stone walls and piazza posts ; and to their delicate tracery may be left the work

of "filling in" their more appropriate and agreeable decorations. . . . The CELLAR (fig. 112), is 6½ feet high, extending under the whole building, giving ample space for the storing of articles requiring a cool, moist air for their preservation. Seven windows are arranged to provide light and ventilation to every part. The outside entrance is from the rear under the back stoop; stairs lead directly up to the kitchen.

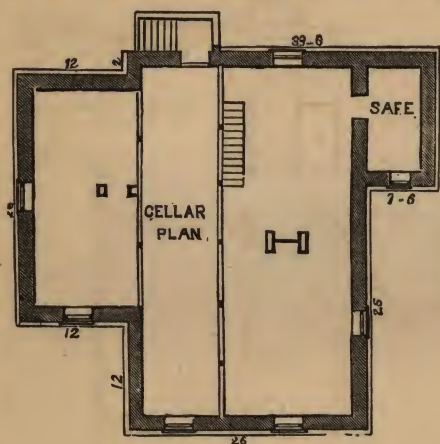


Fig. 112.—PLAN OF CELLAR.

directly up to the kitchen. The "safe" is a "locker," or private cellar for keeping choicer stores. . . . FIRST STORY, (fig. 113.)—Height of ceilings, 10 feet. The arrangements are somewhat peculiar, and are very convenient and pleasant. Each

of the four principal rooms have windows giving views in two different directions. The two halls (front and rear) have stairs in each, and are otherwise arranged for easy communication with all parts of the house. The Parlor is pleasantly situated, adjoins the front hall and dining-room, has a large open fire-place, and is shaded on the front by the piazza. The Dining or living-room is the largest apartment, and communicates directly with every other room and hall on this floor, bringing this entire story under the immediate supervision of the mistress of the household. It has an open fire-place and two closets. The Bedroom is placed in a quiet corner, where the little ones may take their "day naps" without being run over

or disturbed by sudden callers, or those engaged in house-work. The Kitchen is a good-sized apartment, adjoins the dining-room, rear hall, milk-room, large pantry, two closets, and cellar stairway, and is provided with a large range, sink, wash-tubs, and the necessary pipes for supplies of cold and hot water..... SECOND STORY, (fig. 114.)—Hight of

ceiling, 8 feet.

This contains five good-sized chambers, a large hall, and nine closets. The three larger chambers have full-sized side-walls and ceilings; the space beyond the side-walls or partitions are devoted to closets, of which there cannot be too many in any house....

CONSTRUCTION.

—Unless situated on very high ground, having a thorough natural drainage, the earth taken from the cellar excavations should be left on the grounds and graded around the foundation, to insure the turning away of all surface water. In such cases, care must be taken to allow in the depth of the excavation for the hight it is intended to raise the earth grades. The appended estimate of cost is for excavating 3 feet deep. This will furnish 202 cubic yards of earth to raise the grades $1\frac{1}{2}$ foot immediately around the house (leaving 2

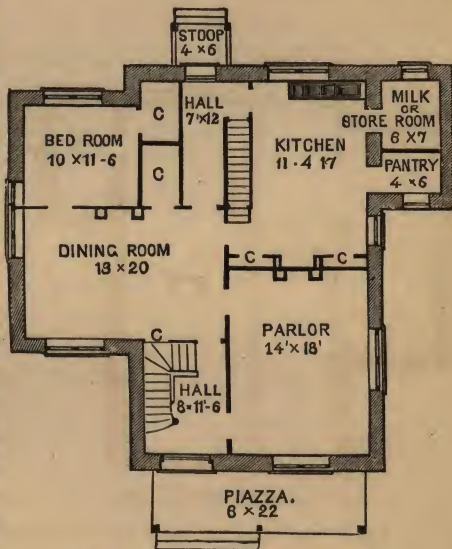


Fig. 113.—PLAN OF FIRST FLOOR.

feet of the foundation exposed to sight), and give a gentle slope outwards in every direction to the distance of 40 feet. All the outside walls are solid masonry. The foundations are of the roughest stone, laid in good mortar, 2 feet thick. A "top floating" of hydraulic cement mortar is used in levelling the upper surfaces, to prevent the ground moisture from rising above that line to be

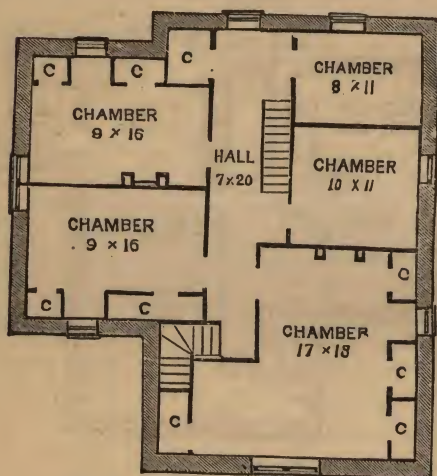


Fig. 114.—PLAN OF SECOND FLOOR.

absorbed by the main walls. The main walls are of rough stone and hard burned bricks laid in strong mortar, 16 inches thick. The outside corners, and the jambs and heads of the doors and windows, are of brick, as shown in fig. 115. Their use greatly facilitates the work of construction, and

obviates the necessity of stone-dressing. The intervening walls are of broken stone "random dressed," laid in courses to conform to the quoin lines of the brick-work, and may be done by common masons. The window and door sills are of ordinary hammered blue-stone. All outside interstices and joints are filled and pointed with cement mortar. Thin strips of wood (mason's lath will do) are laid in between the courses on the inside, to which the inside furring is fastened. The chimneys are built of hard brick, and are finished above the roof with large tops, having cross openings at the sides for each flue, and

close covers.—The Frame-work is very simple; the central girders are supported by large posts on solid stone footing. The beams are notched over the girders, with their ends resting and anchored in the walls, and are thoroughly bridged. The plates are anchored by bolts that are inlaid while building the walls. The rafters are notched over the plates with their lower ends extending $2\frac{1}{2}$ feet beyond the walls; their centers are supported by purlins and collars. The roof is covered with dark slate.

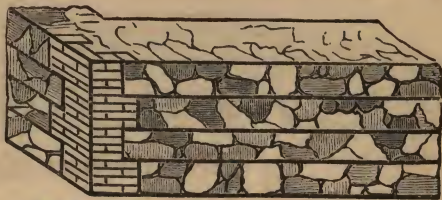


Fig. 115.—MANNER OF BUILDING CORNERS.

The flooring is of mill-worked $1\frac{1}{2}$ -inch plank. The interior of the stone walls is furred off, with unobstructed spaces between the furring to the roof, for the passing off of all dampness. The interior finish is complete throughout. The principal rooms have neatly-moulded architraves, other rooms plain. The kitchen and rear hall are wainscoted. All doors are panelled and moulded, and all windows have inside blinds.—The plastering is three-coat work, with the principal rooms hard-finished, balance white-slipped. The painting, outside, is two coats with the best materials; inside is oil-stained and flat-varnished.—ESTIMATE:

202 yards excavation, 3 ft. deep, at 20c. per yard.....	\$40.40
224 perches stone-work, complete, at \$2.75 per perch.....	616.00
150 running ft. blue-stone sills, at 30c. per ft.....	45.00
6,500 bricks in quoins and chimneys, complete, at \$12 per M.....	78.00
1,000 yards plastering, complete, at 28c. per yard.....	280.00
5,208 ft. of timber, at \$15 per M.....	78.12
1 girder, 4x8 in. 62 ft. long.	33 beams, 3x8 in. 15 ft. long.
1 girder, 4x6 in. 38 ft. long.	35 beams, 3x8 in. 21 ft. long.
2 purlins, 4x8 in. 38 ft. long.	12 beams, 3x8 in. 10 ft. long.
2 purlins, 4x8 in. 18 ft. long.	40 collars, 1x5 in. 13 ft. long.
45 rafters, 3x4 in. 21 ft. long.	1 valley, 3x8 in. 80 ft. long.
8 rafters, 3x4 in. 17 ft. long.	1 plate, 3x8 in. 200 ft. long.
250 wall-strips, at 11c. each.....	27.50
300 furring strips, at 4c. each.....	12.00
Anchors to beams and plates.....	5.00
Cornice materials.....	30.00
420 shingling-lath, at 6c. each.....	25.20
264 squares of slating, complete, at \$9 per square.....	238.50
25 hemlock boards, piazza roof, at 16c. each.....	4.00

24 squares tin, roofing and leaders, at \$8 per square.....	\$20.00
296 flooring, 8 in., at 25c. each.....	74.00
Stairs, complete, \$90; piazza and stoop, \$80.....	170.00
7 cellar windows, complete, at \$5.....	35.00
22 plain windows, complete, at \$10 each.....	220.00
4 dormer windows, complete, at \$18 each.....	72.00
34 doors, complete, at \$9 each.....	306.00
2 mantles, 3 shelves, complete.....	68.00
Closet finish, complete.....	39.28
Range and plumbing, complete.....	175.00
Nails, \$16; painting, \$60; cartage, \$15.....	91.00
Carpenter's labor, not included above.....	150.00
Total cost, complete.....	\$2,900.06

DESIGN XXVIII.

A HOUSE COSTING \$3,000.

These plans were designed for a suburban cottage, having a cheerful outside appearance, and containing ample interior apartments conveniently arranged, with such modern improvements as are desirable for the use of an ordinary sized family..... EXTERIOR, (fig. 116.)—The general outlines are made up of simple parts, embracing features of pleasing variety and elegance. The foundation walls, showing four feet above ground, insure against moisture from the earth, and add to the superficial dimensions of the structure. Such high foundations for houses of this character afford a proper background for the grasses and shrubbery usually surrounding them. The irregularities of the principal building, the steep, dark-slatted roofs, with their heavy projecting cornices, truncated or hooded gables, and enriched barge-boards, together with the stoops and bay-windows, are proportioned and arranged to assimilate with each other, and contribute to gracefulness and harmony..... CELLAR, (fig. 117.)—Height, 7 feet. Seven good-sized windows admit an abundance of light, and afford thorough ventilation..... FIRST STORY, (fig. 118.)—Height of ceiling, 10½ feet. The rooms are unusually large, and arranged

to be pleasant, comfortable, and convenient. The front entrance has large double doors. This hall contains the principal stairs, which are of "platform" construction. We prefer this form whenever the general plan allows it, as such stairs are much easier, less dangerous, and appear better than the usual long, straight flights. The hall connects with

each principal room, obviating the too frequent necessity of passing through one room to reach another. The Parlor has a fire place, adapted to either a grate or fire-place heater (we should prefer the latter in this case, supplied with heating-pipes for warming the



Fig. 116.—ELEVATION OF HOUSE.

chamber above,) and is provided with a marble mantle. A large bay-window admits sufficient light, and affords a pleasant outlook. The remaining sides of this room are unbroken, leaving ample space for furniture, pictures, etc. The Dining, or living-room, is intended as the most agreeable and pleasant room in the house; it has a fire-place with hearth openings, adapted to a "low-down" grate," which is a good substitute for the old home-like fire-place, and affords an opportunity for a generous and cheerful fire, and insures the most perfect

ventilation. The ashes from these hearth fires fall into the ash-pit below them, thus obviating the necessity and dust of their daily removal. A marble mantle with a large hearth, one bay and three plain windows, and a closet, are provided for this room. The windows afford plentiful light, and views from front, side, and rear, thus

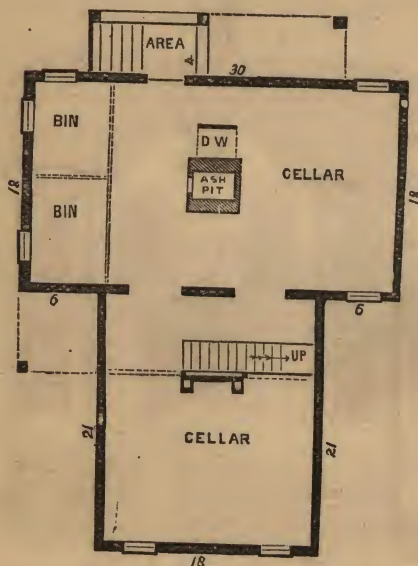


Fig. 117.—PLAN OF CELLAR.

assuring a home-like, cheerful apartment. The Kitchen is pleasantly situated, has four windows for light and ventilation, and is planned with especial regard for convenience. It is in proximity with the principal hall, rear entry, and cellar stairway, has a large pantry, and two closets, and contains a large fire-place, with a range, boiler, sink, and wash-tubs

having pipe attachments for hot and cold water. The dimensions of the fire-place are 2 feet 10 inches wide, 5 feet 6½ inches high, and 1 foot 9 inches deep, with a hearth-stone 2 feet wide, and 4 feet long. The range is fitted into the fire-place, and has a water-back, elevated oven, and warm-closet, and is connected by pipes with the boiler. The dumb-waiter, shown on the plan at the right of the fire-place, is intended as a "coal-lift," which will save many steps and much hard labor running for

coal. This is simply a box, holding three bushels (twelve scuttles), constructed of $1\frac{1}{4}$ -inch floor planks, with wood runners 3 feet long, on two opposite sides, conforming to grooves made in stationary planking in the cellar, and is suspended by weights, with strong ropes, passing over pulleys fastened to the underside of the floor-beams. The upper portions of this closet may be fitted with shelving and hooks, as desired. The large Kitchen Pantry, thoroughly shelved, is in the "addition" that adjoins the kitchen, and is built in combination with the rear stoop. The entry, conveniently situated, communicates between the kitchen and dining-room, and with the back stoop through the rear door.....

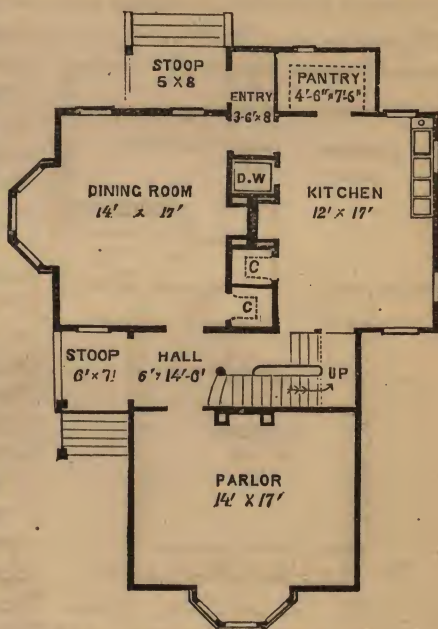


Fig. 118.—PLAN OF FIRST FLOOR.

SECOND STORY, (fig. 119.)—Height of ceiling, 9 feet. This story is divided in the simplest manner, has a hall, three large chambers, with closets for each, and a bath-room, all with sufficient windows for light and ventilation. Each principal chamber has an open fire-place, adapted to grates. Chimneys, centrally situated, radiate most of their heat into the

rooms, thus saving fuel. The Bath-room has a French bath-tub, with cold and hot water, and a seat-closet. The stairway to the attic story is ceiled in over the principal stairs, with a door at the foot. The Attic has three apartments, two intended to be plastered and finished as chambers; the third, or larger one, is unfinished for an open garret.....GENERAL CONSTRUCTION.—The excavations are $2\frac{1}{2}$ feet

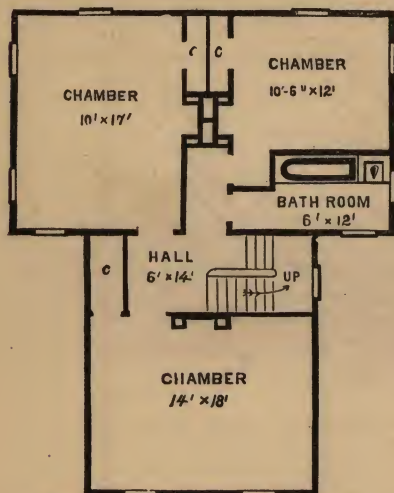


Fig. 119.—PLAN OF SECOND FLOOR.

deep, and the loose earth is graded around the building at completion, leaving 4 feet of the foundation exposed to sight. The foundation-walls are built as described for Design XXXII. The sub-sills of the windows, and the steps and coping of the area, are of bluestone. The chimneys being near the center, are not connected with the foundation walls. The rear one is constructed in box form, below the first floor, as a receptacle for ashes, and has a small iron door near the bottom for removing the ashes. The principal frame-work is of sound pine or spruce timber, of the sizes mentioned in the estimate below. When practicable, we would use pine timber for all sills and posts, as the least liable to decay, and spruce for the girts and beams, on account of its quality for stiffness. The siding is of two thicknesses of boarding, as described for Design XXXII. The principal roof is constructed at the angles of 45° , securing valuable

tions are $2\frac{1}{2}$ feet deep, and the loose earth is graded around the building at completion, leaving 4 feet of the foundation exposed to sight. The foundation-walls are built as described for Design XXXII. The sub-sills of the windows, and the steps and coping of the area, are of bluestone. The chimneys being near the center, are not connected with the foundation walls. The rear one is constructed in box form, below the first floor, as a receptacle for ashes, and has a small iron door near the bottom for removing the ashes. The principal frame-work is of sound pine or spruce timber, of the sizes mentioned in the estimate below. When practicable, we would use pine timber for all sills and posts, as the least liable to decay, and spruce for the girts and beams, on account of its quality for stiffness. The siding is of two thicknesses of boarding, as described for Design XXXII. The principal roof is constructed at the angles of 45° , securing valuable

space for attic rooms, and is covered with dark slate laid on hemlock, with tarred paper between. The roofs of the stoops and bay-windows, and all gutters and valleys, are of I. C. charcoal tin, laid on hemlock boards. The method of constructing the cornice, gutters, and barge boards of the principal roof, is shown in detail in fig. 120. *A*, rafter of 3×4 ; *B*, plate of 4×6 , placed 14

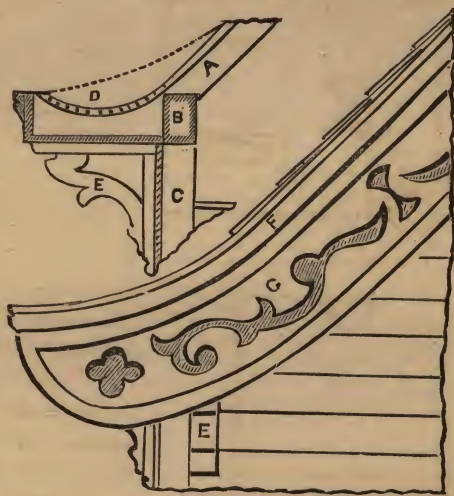


Fig. 120.—CORNICHE, GUTTER, AND BARGE-BOARDS.

inches above the attic floor; *C*, post of 4×7 timber; *D*, gutter, having no abrupt angles to bother the tinsmith, or impair his work, but is of circular form, and stayed with 2-inch furring lath, on which the tin is smoothly and easily laid. *E*, bracket constructed of 2×4 , with simple scroll, sawed from 4×6 timber. *F*, crown moulding of $1\frac{1}{4} \times 3\frac{1}{4}$, worked solid; *G*, barge-board with the crown-moulding attached; this closes the ends of the gutters to the height of the dotted line at *D*. The stairs, interior trimmings, and the general painting, are intend-

The Piazza is 12 feet wide, affording shade and ample protection from storms, and may be used in pleasant weather to enlarge the capacity of the parlor. The Dining-room is entered from the main hall, and communicates through the pantry with the kitchen. The Kitchen has windows front and rear, giving a good circulation of air, and is furnished with a range, boiler, sink, and pump, connected with the necessary piping, with supply from the cistern. Private stairways lead to the second

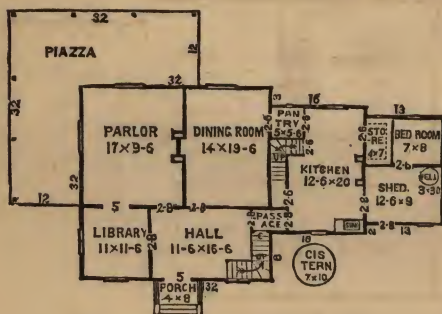


Fig. 122.—PLAN OF FIRST FLOOR.

story, and to the cellar; the necessary pantries are provided. The one-story Addition is divided into three parts, making a work-room or shed, inclosing the well, a servant's bed-room, and a store-pantry.

... SECOND STORY, (fig. 123.)—This story contains a hall, five good-sized chambers, seven closets, and a bath-room. The hall has nine doors leading to the several apartments, two stair landings, and a window, while it occupies but little space. The Bath-room has a bathtub, seat-closet, and pipes for cold and hot water..... ATTIC, (fig. 124.)—A hall and two chambers are finished in this story. The stairs leading to it are inclosed, and have a door at the foot. The hall is lighted by a dormer window in one end. At the opposite end a door leads to the space under the wing-roof, where the tank is placed, immediately above the bath-room..... CONSTRUCTION.—The height of the cellar is $6\frac{1}{2}$ feet, of the first story $10\frac{1}{2}$ feet, of the second story 8 feet, of the attic 7 feet. The

foundations are of brick-work, and show two feet above the final grades. The chimneys are of brick-work, and have six open fire-places, with hearths to each, adapted to the use of either wood or coal fuel. The plastering is "hard-finish" on two coats of brown mortar. Stucco cornices and centers, of simple design, are put in the first story of the main house. Marble shelves with stucco truss-supports are put above each fire-place. A well and cistern are included in the estimate. The depth of the former is put at

30 feet, as the average. To avoid the danger of the caving in of the sides while digging, it is best to make the excavation $4\frac{1}{2}$ ft. square (not circular, as is usu-

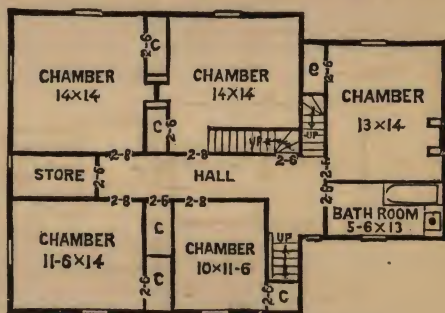


Fig. 123.—PLAN OF SECOND FLOOR.

ally done.) Rough planks, $4\frac{1}{2}$ feet long, with their ends notched half way across, are slid in to lock with each other closely against the banks, as the excavation proceeds, making this part of the work perfectly safe in any kind of earth. The depth of the well should be sufficient to secure at least four feet of spring water. Of course it would be impracticable to lay the brick-work under water that depth, and therefore a circular curb 3 feet 3 inches in diameter, and 6 feet long (inside measure) must be made of ordinary boards, with an interior 4-inch timber rim at the bottom, and let down into the well as soon as water is reached. The rim forms the foundation of the brick-work. After laying a few courses around, say to the height of one or two feet, their added weight will force them (curb and all) downwards under

the water as fast as the depth is increased. The clear inside diameter, when finished, is 2 feet 10 inches; the top courses of brick, to the depth of 3 feet, should be laid in cement mortar; all others laid "dry." The Cistern is constructed entirely of brick and cement mortar, in the earth; 7 feet across, and 8 feet deep in the clear. The frame of the house is of spruce timber, siding of clear pine, beveled clapboards, laid on sheathing-felt. Roofing of cedar shingles, laid "three thick" on spruce lath. The cornices have projections of two inches for

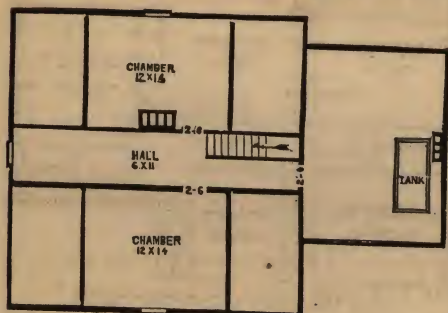


Fig. 124.—PLAN OF ATTIC.

each foot of their height from the ground, which is appropriate for buildings of this character, and is double that of the usual styles. These projections are ceiled underneath with tongued and

grooved boards, and bracketed with chamfered timber trusses. Openings are made through the gable cornices to allow for the escape of heated air from under the roof. The flooring is of 9-inch tongued and grooved spruce plank. All windows above the cellar have 1 $\frac{1}{2}$ -inch sash, and outside blinds. Doors are panelled and moulded. The inside trimmings are quite plain, single moulded, with bold members. The upper frame-work of the piazza is left exposed on the underside, and is neatly dressed and chamfered. The first-story stairs are strongly constructed of pine, with newel, rail, and balusters of black walnut.

ESTIMATE of materials and labor :

93 yards excavation, at 20c. per yard.....	\$18.60
30 ft. digging well, at \$1 per ft.	30.00
19,000 bricks (cellar foundation, chimneys, cistern, and well,) furnished and laid, at \$12 per M.....	228.00

4 barrels cement, at \$2.50 per barrel.....	\$10.00
1,200 yards plastering, at 28c. per yard.....	336.00
5,974 ft. of timber, at \$15 per M.....	89.61
1 girt, 4×8 in. 32 ft. long.	1 sill, 4×8 in. 313 ft. long.
8 posts, 4×7 in. 20 ft. long.	1 plate, 4×6 in. 313 ft. long.
45 beams, 2×8 in. 12 ft. long.	61 beams, 2×8 in. 20 ft. long.
30 beams, 2×8 in. 17 ft. long.	20 beams, 2×8 in. 13 ft. long.
35 beams, 2×8 in. 11 ft. long.	2 girts, 4×6 in. 30 ft. long.
700 wall-strips, at 11c. each.....	77.00
500 clapboards, at 14c. each.....	70.00
350 shingling-lath, at 6c., \$21; 9,650 shingles, at 2c., \$193.....	214.00
150 ft. gutters, valleys, and leaders, at 10c. per ft.....	15.00
1,500 ft. dressed lumber in cornices, at 4c.....	60.00
513 flooring, at 27c., \$138.51; 30 windows, at \$12, \$360.....	498.51
250 lbs. felt, at 5c., \$12.50; 35 doors, at \$10, \$350.....	362.50
5 marble shelves, \$6, \$30; stairs, \$100.....	130.00
Closet finished, \$50; well-curb, \$12.....	62.00
Range and plumbing, \$280; nails, \$20.....	300.00
Carting, average 1 mile, \$40; painting, \$230.....	270.00
Carpenter's labor, \$250; incidentals, \$78.78.....	328.78
Total cost, complete.....	\$3,100.00

DESIGN XXX.

A FRAME AND BRICK FARM-HOUSE COSTING \$3,300.

These designs represent a farm-house having an air of substantial comfort and refinement, and affording ample space and convenience for a large family.... **EXTERIOR**, (fig. 125.)—This style admits of the simplest and most economical finish, is susceptible of almost any degree of irregularity, and is therefore suitable for the greater number of rural buildings. The indestructible covering of the side-walls and roofs has the merit and appearance of permanency.... **CELLAR**, (fig. 126.)—The central division is 7 feet high, has five windows, and outside door, and a stairway leading up to the kitchen. The girders under the first floor beams are supported on large posts, standing on firmly-imbedded flat stones.... **FIRST STORY**, (fig. 127.)—Hight of the ceilings, 11 feet in main house, and 9 feet in the one-story wings at the side and rear. The parlor, sitting-rooms, kitchen, and front hall, are in the main house. The rear wing contains a summer kitchen, bath-room, and a large kitchen pantry. The

side wing is divided into a bed-room, clothes-press, and pantry. The Parlor, Sitting-room, and Bed-room face the front. The Kitchen is the largest apartment, and is arranged to be used as the Living-room. It has windows in each end, an outside door leading to a pleasant veranda, is in direct communication with the front hall, sitting-room, summer kitchen, two pantries, and the cellar



Fig. 125.—ELEVATION OF HOUSE.

stairs. The Summer Kitchen, intended to relieve the larger room of the heavier work, is furnished with a range, boiler, sink, pump, and wash-tubs, and has an outside door. The Bath-room is situated at the side of the summer kitchen, and contains a bath-tub and a seat-closet. A tank $3 \times 3 \times 6$ feet, is placed between the ceiling and roof of this wing, and arranged to receive rain-water from the main roof. A force-pump is set near the iron sink, and arranged to supply water from the cistern to the tank, when the rain supply is exhausted. It will be observed that all the plumbing apparatus is placed

in close proximity, thus insuring economy in the cost of their introduction, and also that their location prevents any serious injury that might arise from a chance bursting, or through carelessness. No windows are shown at the rear of the summer kitchen, or bath-room, this space being reserved for any additions that may be desired for fuel, etc..... SECOND STORY, (fig. 128.)—Hight of ceilings, 9 feet.

There are five chambers, a hall, and two closets in this story. Each chamber is of good dimensions, well lighted (twelve windows in this story,) and may be warmed if required, either by stoves placed in them or through

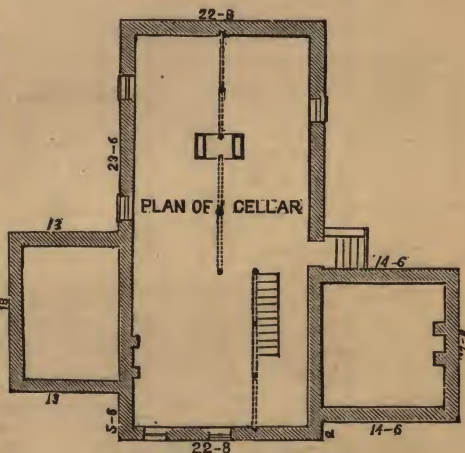


Fig. 126.—PLAN OF CELLAR.

pipes inserted in the flues for the introduction of hot air from heaters in the first story, as described for Design XXXII..... ATTIC.—A flight of stairs, located above those of the first story, and inclosed with narrow ceiling, with a door at the foot, leads to the garret or attic. This story is thoroughly timbered and floored, but otherwise unfinished..... CONSTRUCTION.—The foundation walls are of broken stone, laid in good mortar, 18 inches thick, and show 2 feet above the final grade of the surrounding earth. The materials of the frame are indicated in the estimate below, and are framed together, and raised in the usual manner, except that the sills are placed 4 inches

back from the face of the foundation, to provide a footing for the water-table and brick inclosing. The *inside*

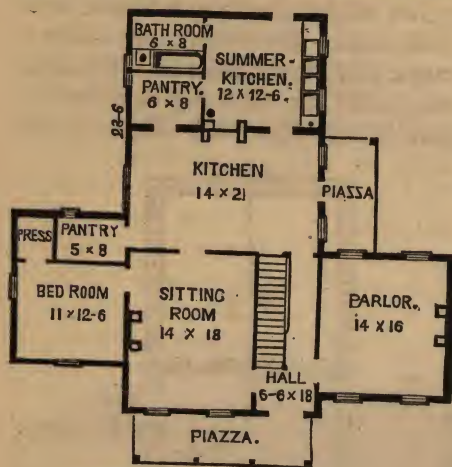


Fig. 127.—PLAN OF FIRST FLOOR.

of the exterior frame is roughly ceiled around with hemlock boards, which are thoroughly nailed to the studding, bringing them "into line," and making them firm. The method of inclosing the sides of the building is shown in fig. 129. *A* is the

foundation; *B* the water-table; *C* the brick wall; *D*,

inside boarding; *E, E, E*, timber of the frame. The water-table, of dressed stone, is laid on the foundation in cement mortar. The brick are laid in "stretchers," in good lime and sand-mortar, with close joints. Anchor-nails (fig. 130) are driven

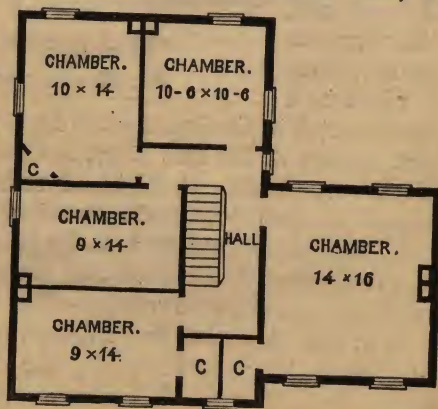


Fig. 128.—PLAN OF SECOND FLOOR.

in each stud in contact with the upper surfaces of every

fifth course of brick, as shown in the sketch. The window sills are of smoothly dressed stone, set in the regular manner. The window and door frames are made as for 8-inch brick-work. The heads are arched over with

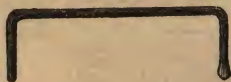


Fig. 130.—ANCHOR NAIL.

brick projecting half an inch beyond the face of the walls, forming a coping to the windows. The anchor nails are made of ordinary galvanized $\frac{1}{8}$ -inch fence-wire; 6 inches long is required for each nail, 1 inch of both ends being bent at a right angle, and one end is flattened to be easily driven into the studding, and the opposite end is imbedded in the joints of the brick-work. These nails are best applied by a carpenter employed to accompany the masons in their work. This mode of building exterior walls may

be new to many persons, but it has been demonstrated and proved to be thoroughly practical, and for many reasons preferable to the usual "solid brick" wall; it is less expensive, does not retain mois-

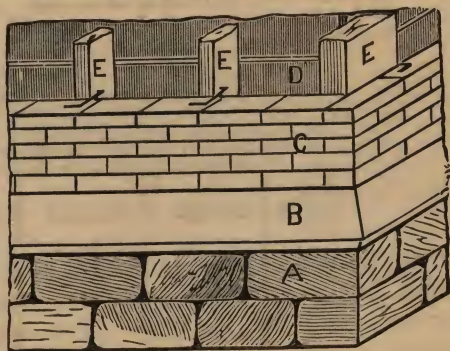


Fig. 129.—MANNER OF BUILDING.

ture, requires no "furring off," or "filling in," and attachments of cornices, stoops, or balconies, are easily made to connect with the inside frame-work. . . . The main and wing roofs are covered with dark 8×16-inch slate, laid 7 inches to the weather. Mason's lath are put on the inside boarding in a vertical manner, 16 inches apart, and the interior of the two full stories is lathed, plastered, and otherwise fully completed.

ESTIMATE OF COST :

157 yards excavation, 4 feet deep, at 20c. per yard.....	\$31.40
60 perches stone foundation, at \$2.75 per yard.....	165.00
44 ft. stone steps and cellar window-sills, at 30c. per ft.....	13.20
278 feet dressed stone-sills and water-table, at 75c. per ft.....	208.50
31,000 brick, furnished and laid, at \$12 per M.....	372.00
925 yards plastering, at 28c. per yard.....	259.00
Stucco cornices.....	30.00
6,707 ft. timber, at \$15 per M.....	100.60
Sills, 4×8 in. 252 ft. long.	70 beams, 3×8 in. 22 ft. long.
Plates, 4×6 in. 252 ft. long.	21 beams, 3×8 in. 15 ft. long.
Ties, 4×6 in. 324 ft. long.	8 beams, 3×8 in. 13 ft. long.
Girders, 4×8 in. 46 ft. long.	1 piazza, 3×7 in. 122 ft. long.
10 posts, 4×7 in. 23 ft. long.	1 piazza, 3×5 in. 70 ft. long.
100 joist, 3×4 in. 13 ft. long, at 16c. each.....	16.00
400 wall-strips, at 11c. each.....	44.00
600 hemlock boards, for sheathing and roofing, at 16c. each.....	96.00
Cornice materials, \$70; 21 squares slate, at \$9, \$189.....	259.00
436 ft. tinning, gutters, and leaders, at 8c. per ft.....	34.88
500 flooring, 9-inch spruce, at 26c. each.....	130.00
Stairs, complete, \$90; piazzas, \$130.....	220.00
5 cellar windows, complete, at \$6 each.....	30.00
33 windows, above cellar, complete, at \$10.....	330.00
25 doors, at \$10, \$250; range and plumbing, \$250.....	500.00
3 mantles, \$75; closet finish, \$25.....	100.00
Painting, \$113.66; cartage, \$30.....	143.66
Carpenter's labor, not included above.....	200.00
Incidentals.....	16.76
Total cost, complete.....	\$3,300.00

DESIGN XXXI.

A HOUSE COSTING \$3,700.

The plans here given are somewhat peculiar in arrangement, intended for a compact and economical residence or parsonage, containing thirteen rooms, ample halls, eleven closets, large cellar, heater, range, cold and hot water, and, in fact, all the necessary modern improvements suitable for the uses of a good-sized family.....

EXTERIOR.—The general outline is nearly square, 26×30 feet, affording the most simple and economical form of construction, and embraces a much better opportunity for the most desirable distribution of rooms. The porch, bay-window, and lobby, provide projections that serve to break up and relieve the monotony usually observed in square buildings. Three elevations (figs. 131, 132, 133,)

are given, from which choice can be made, according to the situation of the building INTERIOR.—It will be observed that the arrangements of the interior partake very much of the character of a “double house,” partic-

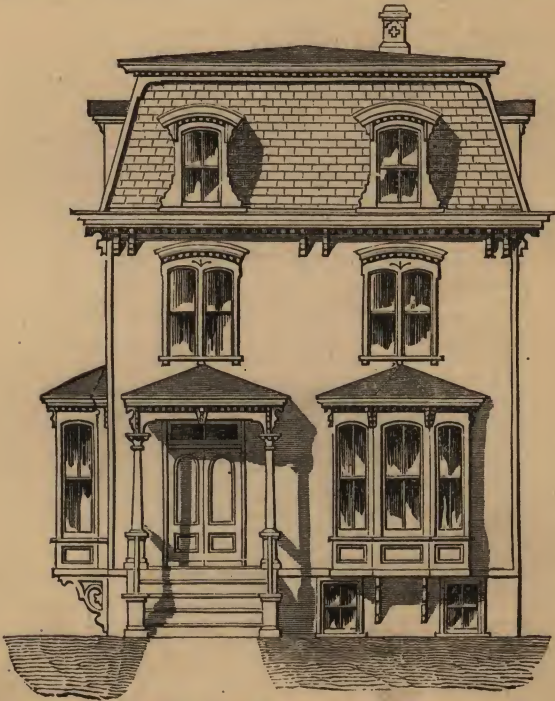


Fig. 131.—MANSARD ROOF.

ularly in the upper stories . . . CELLAR, (fig. 134.)—The Cellar extends under the whole house, and contains the heater and bins for coal, etc. The Heater (“portable”) is arranged to provide warm air to each room in the two principal stories, except the kitchen FIRST STORY, fig. 135.)—The Entrance, or Reception Hall, is large, and contains the principal stairway of the

house, so arranged that the quarter-circle is about midway of their height, placing the niche down, where

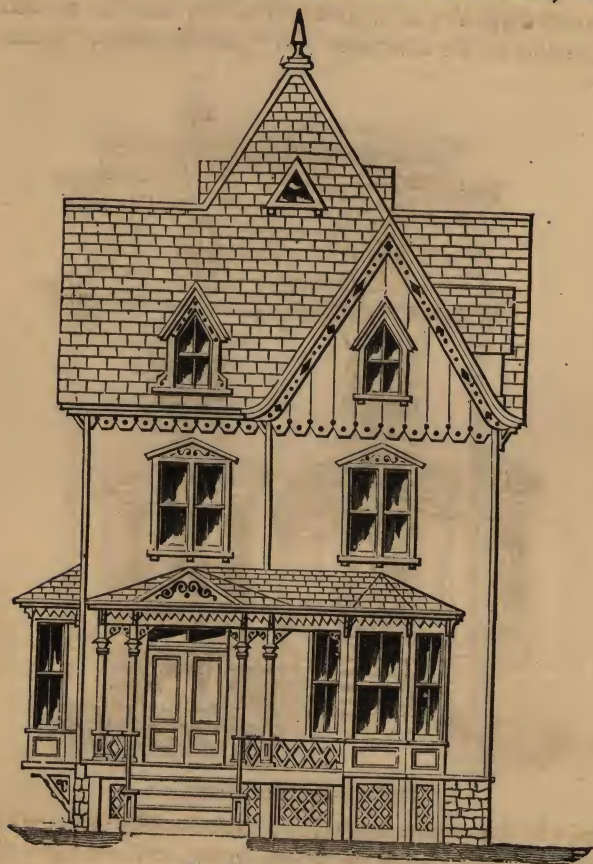


Fig. 132.—POINTED ROOF.

it adds greatly to the good appearance of the hall. The principal rooms, Parlor and Dining-room, where it is usual for the family to congregate, are large and accessible. Each has a large bay-window, adding to its area,

and supplying a pleasant outlook. The Kitchen adjoins the dining-room and the rear entrance, or lobby, and has direct communication with the cellar-stairway through a door. It is provided with a range, boiler, sink, pump, and wash-tubs, complete. The Lobby, or rear entrance,

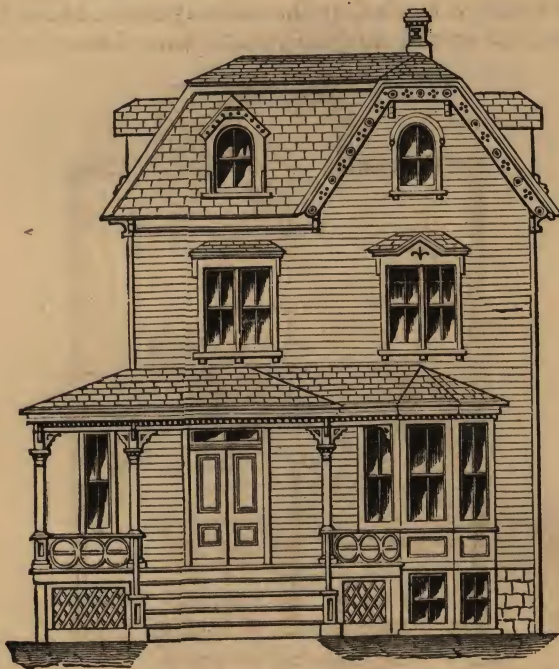


Fig. 133.—COTTAGE ROOF.

is arranged to connect by doors with the dining-room, kitchen, and private stairway leading to the second floor.SECOND STORY, (fig. 136.)—The method of erecting the stairs make them “land” nearly in the center of the second story. Very little space is required for the second-story hall, leaving almost this entire floor to be “laid off” in rooms. These rooms may all be used as cham-

bers, or either of them may be used as a study. Doubtless the room directly above the front entrance would be best adapted for that purpose. The door leading to this room should have ground-glass upper panels to supply light to the hall of this story.... ATTIC, (fig. 137.)—The Attic story is reached by the stairway shown at the front end of the second-story hall, which has a door at the foot

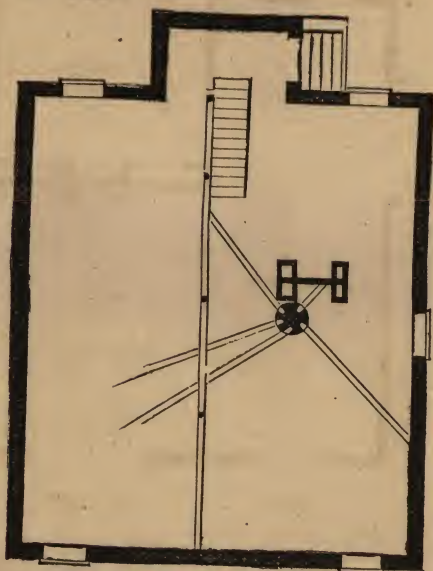


Fig. 134.—PLAN OF CELLAR.

of them to shut off all communication at pleasure. This story is divided into four rooms, four closets, and hall. The Hall is lighted through an opening, or skylight, in the roof, which also serves as a ventilator. The School, or Play-room, is put in this part of the house, where noise is less likely to disturb the older members of the household. A Work-shop, having ample space for a work-bench, wood-lathe, and other tools, is provided for

in our plan on the third floor.... The estimate appended indicates the general character of the work to be good and substantial. Provision is made for brick foundations, a regular timber frame, double siding, slate and

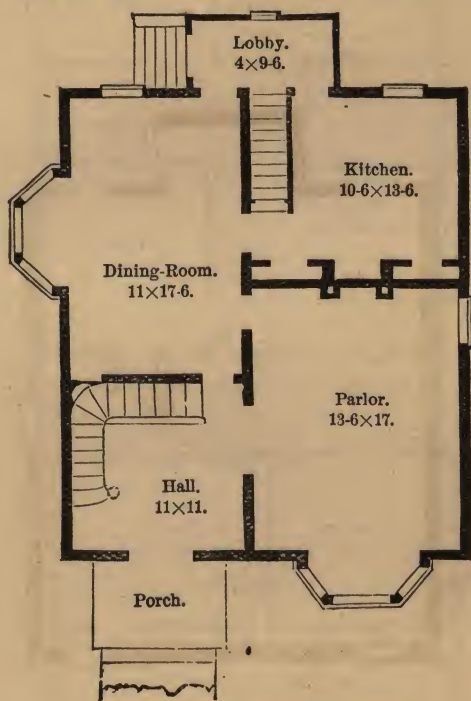


Fig. 135.—PLAN OF FIRST FLOOR.

tin roofs, outside blinds, panelled doors, simple and appropriate trimmings throughout, with marble mantles and stucco cornices in the principal rooms of the first story. The figures set down for the cost of windows, bays, porch, lobby, and doors, include materials and labor. The figures for carpenters' labor are for the balance of such work.

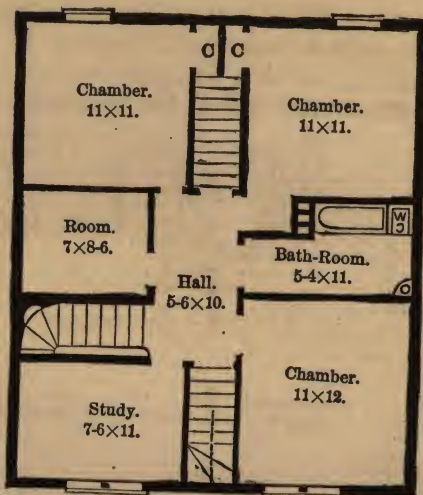


Fig. 136.—PLAN OF SECOND FLOOR.



Fig. 137.—PLAN OF ATTIC.

ESTIMATE for house with Mansard roof :

75 yards excavation, at 20c. per yard.....	\$15.00
13,000 brick, furnished and laid, at \$12 per M.....	156.00
48 ft. stone sills, steps, and coping, at 40c. per ft.....	19.20
1,000 yards three-coat plastering, at 28c. per yard.....	280.00
250 ft. stucco cornices, with centers.....	75.00
4,181 ft. of timber, at \$15 per M.....	62.71
2 sills, 4×8 in. 26 ft. long.	2 plates, 4×6 in. 26 ft. long.
2 sills, 4×8 in. 30 ft. long.	2 plates, 4×6 in. 30 ft. long.
6 posts, 4×7 in. 23 ft. long.	4 deck plates, 3×8 in. 23 ft. long.
1 girt, 4×8 in. 38 ft. long.	2 deck plates, 2×8 in. 30 ft. long.
4 ties, 4×6 in. 26 ft. long.	8 beams, 3×8 in. 15 ft. long.
4 ties, 4×6 in. 30 ft. long.	66 beams, 2×8 in. 15 ft. long.
4 hips, 3×7 in. 16 ft. long.	66 beams, 2×8 in. 12 ft. long.
100 joists, 3×4 in. 13 ft., at 22c. each.....	22.00
500 wall-strips, 2×4 in. 13 ft., at 11c. each.....	55.00
483 sheathing for sides and roofs, at 25c. each.....	120.75
300 lbs. tarred felt, at 5c. per lb.....	15.00
381 novelty siding, 6-inch, at 30c. each.....	114.30
112 ft. main cornice, at 60c. per ft.....	67.20
10 squares of slate, at 10c. per ft.....	100.00
12½ squares of tin, at 10c. per ft.....	125.00
8 cellar windows, complete, at \$8 each.....	64.00
12 plain windows, complete, at \$12 each.....	144.00
8 dormer windows, complete, at \$20 each.....	160.00
2 bay-windows, complete, at \$60 each.....	120.00
1 porch, complete.....	75.00
1 lobby, complete.....	50.00
390 tongued and grooved flooring, complete, at 28c. each.....	109.20
46 doors, complete, at \$10 each.....	460.00
11 closets, complete, at \$6 each.....	66.00
2 marble mantles, complete, at \$25 each.....	50.00
1 heater, complete.....	200.00
Gas-pipes.....	35.71
Plumbing, including range, etc.....	300.00
Painting.....	188.93
Carting.....	75.00
Extras for hardware, etc.....	75.00
Carpenters' labor.....	300.00
Total amount.....	\$3,700.00

DESIGN XXXII.

A HOUSE COSTING \$4,000.

This plan of a large house provides ample and conveniently-arranged apartments, containing the most requisite of modern improvements, suitable to the requirements of a good-sized family. The general outline of the ground plan is nearly square—30×36 feet—securing the greatest economy in expense of construction, and embracing a liberal provision for comfort, and a suitable regard



Fig. 138.—ELEVATION OF FRONT OF HOUSE.

for appearances, without sacrificing one for the other. There is always a certain boldness in the exterior, or *elevation*, of a square double front, which no other style

affords, expressive of substantial dignity. The two Bay-windows and Porch are united in construction, the porch having its ends partly sheltered by the projecting bay-windows, is a pleasant feature. The second story, attic, and cupola windows, have circular heads, with heavy dressing. The main Cornice is heavily trussed; the Cupola is large and roomy, and all are proportioned to make this house worthy of almost any situation. The CEL-

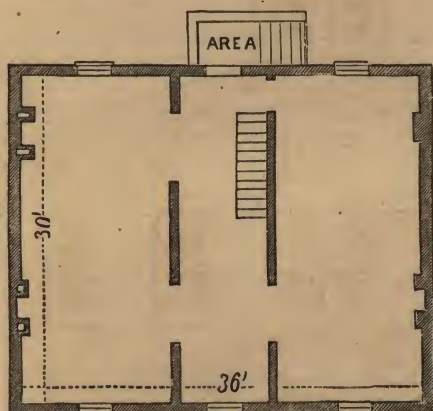


Fig. 139.—PLAN OF CELLAR.

LAR extends under the whole house, with walls of hard brick and mortar 8 inches thick, and 7 feet high, and should extend $1\frac{1}{2}$ inches outside of the frame-work of the house, so as to be "flush" with the sheathing. The cross-walls, as shown on the plan, are

of the same materials; all such walls should have "heading-courses" every 20 inches, and if in sandy bottom, a suitable bedding should be provided, as described for Design XII., which will insure a perfectly safe and satisfactory foundation. The AREA walls should be made of hard brick, with stone coping and steps, laid in cement mortar. All chimneys should be started and laid up with the foundation, and the materials interlaced to bind them together; this will insure additional strength to both foundation and chimney. We recommend plastering, or "laying off" the ceiling of the cellar, with one coat of brown mortar, at a cost of \$25, which would be a perma-

ment benefit to the whole house, in preventing the damp cellar air from rising up through the floors and frame-work of the house. Such air is almost sure to be vitiated by decaying vegetable matter, and is the undoubted source of much disease. Another advantage derived from such plastering is the shutting out of rats and mice from the frame-work of the house, and lastly, it affords an opportunity of purifying and sweetening the cellar easily by (the simplest of all means) a coat of white-wash. The materials used in the Frame are indicated in the estimate appended below. Sills should be framed for each cross and outside wall, so as to secure equal bearings, and allow for even shrinkages; and when put in position, they should be bedded in mortar, to prevent

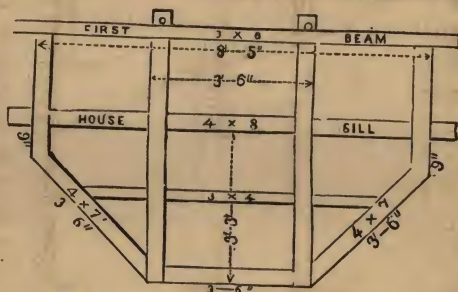


Fig. 140.—FRAMING OF BAY-WINDOW.

any inequalities in the bearings of the frame-work, to strengthen the foundation, and also to effectually shut out cold air from getting between the cellar ceiling and the first floor. All beams and studding are placed 16 inches from centers. The first tier of beams should be framed into the sills, and their tenons wedged from the outside, to "draw them home." They should also bear upon the wall equally with the sill. All beams having a span of 12 feet and over, should have at least one row of cross-bridging of $1\frac{1}{4} \times 3$ -inch "fencing." The second and third story beams are notched over the ties, and spiked fast. The cupola posts rest directly on the center girts, and the principal roof-timbers are framed and secured to these posts. In this frame there need be no tendency to self-

destruction, so common in large buildings, such as oblique or outward thrusts, or irregularity of bearings, but a perfect "repose" is secured to every piece of timber in the house.... The BAY-WINDOW frame-work (see fig. 140) is 1 inch less in depth than the principal sills of the house, to allow for the thickness of the boarding beneath them, so that the water-table, when put around the house may

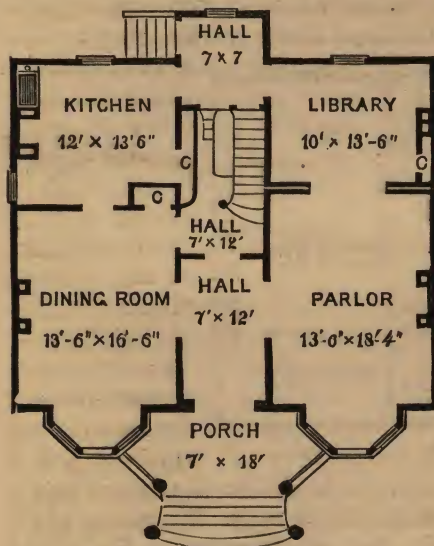


Fig. 141.—PLAN OF FIRST FLOOR.

be in line. The distances given on the diagram of the bay frame may be relied upon as correct. "Bay - windows are apt to be cold," is often said, but a sure preventive of such "cold" is easily secured by filling in between the beams and panels with dry sand, which will make them as tight as any other part of a house.—

The *character* and *quality* of a house depends greatly upon the material and manner of SIDING. In our estimate we have provided for mill-worked sheathing, which should be put on diagonally, and thoroughly nailed to the frame, which will serve the double purpose of securing more warmth and strength than any "filling in" of brick, and is less expensive. A strip of the same thickness as the sheathing, and 2 inches wide, should be first nailed to the sill, close down to the masonry, to pre-

vent the air from entering the joints of the sheathing, and following them upwards into the house. Tared paper is next stretched over the sheathing, when the window-frames, water-table, and corner-boards should be set, and lastly, the novelty-siding put on, and double-nailed to each stud. The Windows are arranged for each sash to be hung, and all to have blinds. All windows above the first story have "circular heads," with caps turned of 4-inch timber. The Keys shown on the elevation are

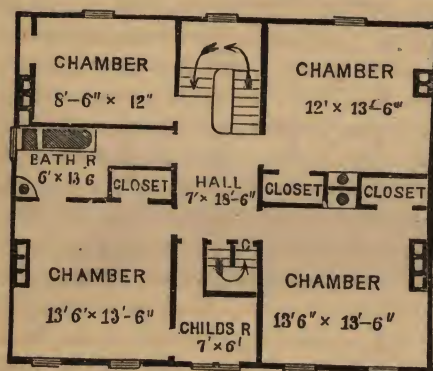


Fig. 142.—PLAN OF SECOND FLOOR.

covered with I. C. charcoal tin, laid and soldered in the best manner, on sound hemlock boards. The gutters of the main house are made as described for Design V.... The FIRST STORY plan (fig. 141) shows the general division of four rooms and three halls. The Entrance Hall, or Reception Room, is 7 x 12 feet. The Stairway Hall is also 7 x 12 feet. The Rear Hall is 7 x 7 feet. These halls are divided from each other by sash doors. The entrance hall is divided from the parlor and dining-room by large double doors. The advantages of dividing the halls in the manner shown will be obvious to any one when they consider how cold, windy, and cheerless most halls are. By this arrangement all drafts are prevented, either when

sawed out at the back, so as to fit over the caps (not cut through them). This is much simpler, more ornamental, and does not impair or affect the solid head.— The roof projects 27 inches beyond the frame of the building, and is

opening the entrance door, or when passing from one room to another. The inside double doors may be swung open altogether, throwing the principal rooms of the lower floor into one spacious apartment, if occasion should require, for a large company, without altering to any material degree the temperature of these rooms. The stairway hall contains the principal stairs, which are of the easiest "platform" construction, so arranged that a more private stairway is entirely unnecessary. The rear hall is the common hall of the house, and is easily reached from every part. The Parlor is the largest room, has a bay-window, marble mantle, and fire-place heater, and is separated from the library by sliding doors. The Dining-room has also a bay-window, marble mantle, and fire-place heater, and is intended as the Living-room. It is conveniently connected with the kitchen, stairway hall, entrance hall, and has a good pantry (c). The Kitchen is separated from the dining-room by a single door, and in close proximity to the rear entrance and cellar stairway doors. It contains one large closet, range with elevated oven, warm-closet, and water-back, boiler, sink, and wash-tubs. The Kitchen should be wainscoted 3 feet high, with $\frac{5}{8}$ " $\times$ 3-inch ceiling-boards. The clock and lamp-shelf should be put between the closet and hall doors, and not over the range. The advantage of having the kitchen on the same floor with the dining-room must be apparent to every one.... The SECOND STORY plan (fig. 142) is divided into four large chambers, a child's bedroom, a bath-room, five closets, with a good-sized hall. The two Front Chambers are heated by hot air from the "fire-place" heaters of the first story, so that they are always comfortable in the coldest weather. For many reasons we prefer the fire-place heaters over any other. They take little room, are cheerful in appearance, easy of management, and economical, requiring attention but twice in twenty-four hours, if hard coal is used. Each heater

will keep two ordinary sized rooms comfortable in winter, and are not unsightly in summer. Like any other device for heating, the perfect and satisfactory results depend altogether on the manner of setting them. In no case should a heater be expected to develop its full power when placed in a fire-place in so close proximity with the brick as to allow the hot air to strike against and be absorbed by them. The heater should be enclosed in a jacket of sheet-iron, having an 8-inch opening, and a collar at the top. Attached to the collar, and "built in" the chimney, should be an 8-inch tin pipe, connecting with the register-box in the second story. Above this box this flue should be entirely closed. The smoke-pipe should be 4-inch, and pass up through the 8-inch tin pipe to the register-box, where an elbow should be put on, turning the smoke into the side flue adjoining. The side flue should have no other side openings. The Bath-room has bath-tub, seat-closet, wash-basin, with cold and hot water faucets. Each chamber to the right of the hall to have wash-basins. These Chambers have marble mantle shelves, resting on plaster trusses, at an expense of \$6 each, which answer the purpose that a \$20 mantle would, and are really more cheerful and appropriate for such rooms....The Attic is reached by the enclosed stairway, and is arranged so that two or four bedrooms may be "finished off" as required. The Tank is placed on the floor over the bath-rooms, and is supplied partly from the roof, and partly by the force-pump in the kitchen. All the remaining space in the attic may be used for storage, etc.....The Cupola-room is 7×7 feet, reached by a light stairway. The head-room is made to subserve the purpose of a stand or table, so that really very little room is taken away by the stairs....Very few people have any definite idea of the expense of the separate items that are comprehended under the head of Plumbers' Work. The following estimate in detail of

plumbing, required in this house, gives facts and figures enough to enable any one to decide just how much plumbing can be done for any given sum, viz. :

Sheet-lead, $3\frac{1}{2}$ lbs. to square ft., for tank, $2\times 4\times 6$ ft., with stop-cock.....	\$21.00
Bath-tub, 10 oz., \$15; plated flange and thimble-cock, \$6; plated plug and chain	22.50
Pan-closet, \$12.25; plated cup and pull, \$1.50; French bowl, \$2.20; trap, 4 in., \$3.75	19.70
3 wash-basins, \$1.70 each; marble slabs, \$5 each; plug, stud, and chain, \$1.50 each; 2 cocks, trap, screw, plug, \$3 each.....	36.60
1 iron sink, 18×24 inches, \$2; 2 cocks, \$3.50; trap and screw, \$1.....	6.50
35-gallon copper boiler, \$27; with stand, \$2.....	29.00
Force-pump, with brass cylinder.....	17.00
20 ft. 4-in. iron soil-pipe, at 50c. per ft.....	10.00
372 lbs. supply and circulation pipe, at 8 $\frac{1}{2}$ c. per lb.....	31.62
125 lbs. waste-pipe, at 8 $\frac{1}{2}$ c. per lb.....	10.63
Solder, tacks, and charcoal for this job.....	3.00
5 days' time, plumber and helper, \$6 per day	30.00
Total amount of cost.....	\$237.55
10 per cent added by plumbers in estimating.....	23.75
Total Plumber's charges for the job.....	\$261.30

To the bill for plumbing we add the cost of :

Range, with elevated oven, warm-closet, water-back, set complete.....	\$80.00
Heaters, 2 "fire-place," with registers and heating pipes, \$45 each.....	90.00

COST.—Estimate of cost of building by this plan. It will be noticed that the prices given for bay-windows, porch, lobby, stairs, windows, cupola, and doors, include materials and labor complete, and that the amount of carpenters' work is for the balance of such labor required on the job :

100 yards excavation, at 20c. per yard.....	\$20.00
24,000 brick, furnished and laid, at \$12 per M.....	288.00
950 yards plastering, 3-coat, at 28c. per yard.....	266.00
6,578 ft. timber, at \$15 per M.....	98.67
4 sills, 4×8 in. 30 ft. long.	70 beams, 2×8 in. 15 ft. long.
2 sills, 4×8 in. 36 ft. long.	60 beams, 2×8 in. 22 ft. long.
10 posts, 4×7 in. 21 ft. long.	15 beams, 3×8 in. 22 ft. long.
Ties, 4×6 in. 300 ft. long.	4 hips, 3×8 in. 18 ft. long.
4 cupola posts, 4×6 in. 15 ft. long.	4 valleys, 3×8 in. 18 ft. long.
Plates, 4×6 in. 132 ft. long.	14 rafters, 3×5 in. 17 ft. long.
100 joist, 3×4 in. 13 ft. long, at 22c. each.....	22.00
400 wall-strips, 2×4 in. 13 ft. at 11c. each.....	44.00
320 sheathing, 7×10 in. 13 ft. long, at 25c.....	80.00
200 lbs. tarred paper, at 5c. per lb.....	10.00
320 novelty siding-boards, 9 $\frac{1}{4}$ -inch, at 38c. each.....	121.60
195 hemlock roof boards, at 22c. each.....	42.90
240 tongued and grooved flooring, at 35c. each.....	84.00
168 ft. cornice, at 70c. per ft.....	117.60
17 $\frac{1}{2}$ squares of tin roofing, at \$10 per square.....	175.00
190 ft. gutters and leaders, at 10c. per foot.....	19.00
Cupola, complete, except tin (included above).....	100.00
2 bay-windows, complete, at \$75 each.....	150.00
1 porch, complete, \$75; lobby, complete, \$50.....	125.00
4 stairs, complete, \$100; 17 windows, complete, \$15.....	355.00
5 cellar windows, at \$6 each.....	30.00
34 doors, at \$12 each.....	408.00
2 marble mantles, at \$30 each	60.00

4 marble shelves, at \$6 each.....	\$24.00
5 kegs nails, at \$5 each	25.00
Painting.....	250.00
Cartage, average 1 mile.....	56.40
Shelving, base, bell-hanging, etc.....	73.70
Carpenter's labor.....	360.00
Plumbing, as detailed above.....	261.30
Range, \$80; Incidentals, \$162.83; 2 heaters, at \$45, \$90.....	296.33
Total cost of house.....	\$4,000.00

DESIGN XXXIII.



Fig. 143.—ELEVATION OF HOUSE.

A BRICK HOUSE COSTING \$4,000.

This plan was designed for the residence of Dr. Samuel McClure, of Olney, Ill. The style and general characteristics are significant of elegance and comfort, and suggest

its adaptation to suburban, rather than the more rural situations. . . . ELEVATION, (fig. 143.)—There is a peculiar compactness in the outlines of the principal building, while the piazza and tower contribute largely to the symmetry and gracefulness of the entire structure. The

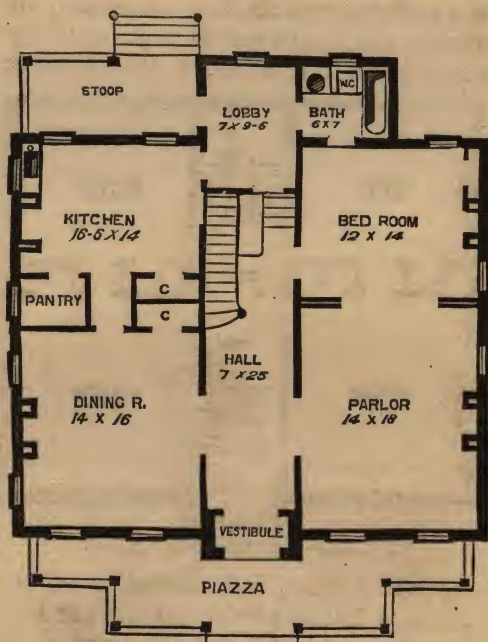


Fig. 144.—PLAN OF FIRST FLOOR.

general details of the exterior are quite simple in themselves, and are so proportioned and arranged as to adapt them to each other with artistic effect, and to produce marked features of unity and completeness. . . . FIRST STORY, (fig. 144.)—Hight of ceiling, 11 feet. The general divisions and arrangements are simple and practical. The principal entrance from the piazza is through outside and vestibule doors. The outside doors are made in

pairs, with solid panels heavily moulded on the face. The vestibule doors are of similar construction, except that their upper panels are of glass. There is a seeming extravagance in such "vestibules," or duplication of doors, at the entrance of any dwelling, and they may be regarded as a luxury rather than a necessity, and would be superfluous and inappropriate in the ordinary cottage or farm-house; but in residences of this character, where

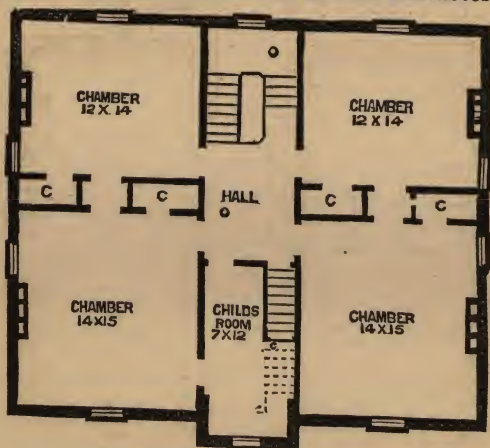


Fig. 145.—PLAN OF SECOND FLOOR.

there is abundant space, such vestibules are manifestly proper, adding a feature of elaborateness, and providing for many contingencies of times and seasons. The outside, or storm-doors, afford protection against extreme cold and severe storms, and furnish additional security. The vestibule, or "glass" doors, admit an abundance of cheerful light to the hall. The Main Hall is roomy, and contains the principal stairs, which are of platform construction, are wide, and have hard-wood rail, balusters, and newel. The Parlor and Dining-room adjoin the hall through large double doors. The parlor and bed-room are separated by sliding doors. The Bed-room has doors

leading to the principal hall and to the bath-room, which has a wash-basin and water-closet. The Kitchen is supplied with a range, with elevated oven and a water-back; a 30-gallon copper boiler, a sink with closet underneath, a pump, and stationary wash-tubs in three divisions, and it connects through doors with the dining-room, rear

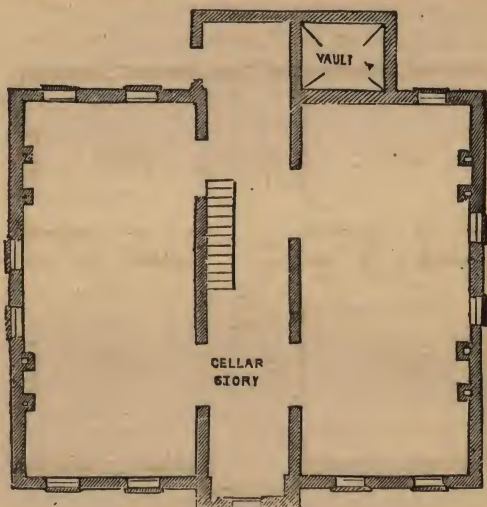


Fig. 146.—PLAN OF CELLAR.

lobby, cellar-stairway, a large pantry, and a dish-closet. The Rear Lobby is arranged to connect with the rear entrance, kitchen, bath-room, and principal hall. The Bath-room contains a tank, with a capacity for four hogs-heads of water (placed near the ceiling), bath-tub, wash-stand, and seat-closet. Lead pipes necessary for the supply and distribution of cold and hot water, are provided in the kitchen and bath-room. Marble mantles are provided for the principal rooms of this story, at an average cost of \$25 each. Double architraves are intended for the trimmings of the windows and doors in the principal apartments, and neat chair-backs are provided

for the dining-room and kitchen..... SECOND STORY (fig. 145.)—By the peculiar method of constructing the roof and frame-work, it will be found that the inside walls of this story are vertical or plumb, instead of angling as in the usual Mansard roof. The ceiling is 9 feet high. This story has a hall, four large and one small, rooms, five closets, and a stairway to the tower. Each of the four large chambers have marble shelves resting on plaster trusses, as described in Design XXXII. Single architraves are intended for the trimming of this story. CONSTRUCTION of the Walls and Roof.—The excavations are made $1\frac{1}{2}$ foot deep, and the earth thrown

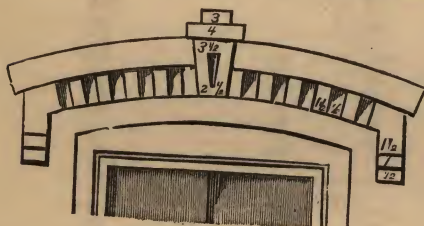


Fig. 147.—WINDOW-CAPS.

out is used in grading around the house at completion, raising the surrounding surface 1 foot. The foundation and cross-walls (fig. 146) are $6\frac{1}{2}$

feet high. The principal walls resting on the foundation are 14 feet 3 inches high, and the walls of the tower extend 11 feet 6 inches above the principal walls. The walls inclosing the wing in the rear are 10 feet high; all of hard burned brick and good mortar. The exterior walls of the foundation are 12 inches thick, and all other walls are 8 inches thick, and have heading courses every 2 feet. The bottom courses of the exterior foundation, to the height of $2\frac{1}{2}$ feet, are laid in mortar composed of hydraulic cement and sharp sand, to prevent the absorption of dampness from the earth; all other mortar is composed of lime and sand. All exterior surfaces of brick-work that are exposed to view have "flush-joints," and those intended for painting should be rubbed smooth. All windows for the cellar and first

story have sills of dressed stone, and have heads neatly arched of brick-work. The window-caps for the first story windows are laid of brick, as shown in sketch, (fig. 147). These caps are easily executed while constructing the walls, and are quite ornamental; the figures on the sketch denote the distances or projections of the several parts beyond the face of the wall. . . . Plates of 3×8 timber are laid flatwise on top of the brick walls, and the



Fig. 148.—SECTION OF FRAME.

upper or roof framework is added as shown in section, (fig. 148): *A*, foundation, 12 inches thick; *B*, principal wall, 8 inches thick; *C, C*, tower walls; *D, D*, tower posts, 4×6 inches, adjoining the upper portion of tower walls, and forming a part of the tower; *E, E*, principal plates, 3×8 laid on brick work; *F*, tie, 3×8 , resting on 2×4 studding, placed inside the wall, and nailed to the principal plates; *G, G*, rafters sawed to pattern, the lower end projects one inch beyond the face of the wall. *H*, ceiling timbers resting on the ties. The remaining framework will be readily understood. The roofs are inclosed with rough hemlock boards of even thickness, and thoroughly nailed to the rafters—

and lastly covered with I. C. charcoal tin. The method of laying the tin on the upright or Mansard part of the roof, is known in the trade as the "raised groove" plan, in which all the vertical joints of the tin are raised and folded, leaving an elevated seam or ridge, which stiffens the general surface, and adds to the picturesqueness of this form of roof, without increasing its cost. The balance of the tinning is laid with the ordinary lock-joint

and soldered. *Gas pipes* are inserted in the framework so as to be concealed, except where they appear for attachments for 4 ceiling lights, and 4 side lights in the first story; for 8 side lights in the second story; for 1 ceiling light in the tower, and for 1 side light in the cellar. Ample opportunities for a thorough *Ventilation* are provided for in this plan. It will be seen that the four large rooms have windows in two of their sides, affording the most certain and satisfactory means of ventilation known.—Flues are also provided adjoining each room in which registers are put, for use in the more severe weather. Provision is made for the escape of the air from between the ceiling of the second story and the roof.—Five strong tin 4-inch tubes, with funnel covers, are inserted in the deck of the principal roof; four of them are placed 3 feet behind the chimneys, and one near the rear, connecting with a flattened tube leading directly from the bath-room. . . . The following *ESTIMATE* of the quantities of materials and labor, of their several kinds, and their cost, embraces everything necessary to the completion of the house, excepting the appliances for heating, which may consist of a furnace, fire-place heaters, or open grates, as shall be best adapted to the location. In this vicinity, where hard coal is the chief fuel, we would suggest a furnace, placed in the cellar, with large pipes arranged to convey warm air to the different parts of the house. In localities where bituminous coal is used, the open grate gives good results, and is exceedingly cheerful in appearance. There are ranges and parlor stoves constructed to burn soft coal successfully, and it is undoubtedly possible that heating furnaces may be adapted to the use of the same fuel.

ESTIMATE OF COST :

80 yards excavation, at 20c. per yard.....	\$16.00
60,000 brick, complete, at \$10 per M.....	600.00
120 ft. stone sills and coping, at 30c. per ft.....	36.00
1,000 yards plastering principal, complete, at 28c. per yard.....	280.00
120 yards plastering ceiling of cellar, complete, at 15c.	18.00
4,763 ft. of timber, at \$15 per M.....	71.44

2 sills, 4×8 in. 28 ft. long.	4 hips, 3×6 in. 14 ft. long.	
68 beams, 3×8 in. 15 ft. long.	1 deck tie, 3×8 in. 138 ft. long.	
34 beams, 3×8 in. 8 ft. long.	1 deck plate, 3×6 in. 188 ft. long.	
4 beams, 3×7 in. 16 ft. long.	1 main plate, 3×8 in. 139 ft. long.	
9 beams, 3×7 in. 19 ft. long.	1 tower plate, 3×8 in. 34 ft. long.	
4 girts, 4×6 in. 28 ft. long.	4 tower posts, 4×6 in. 14 ft. long.	
1 brace, 3×5 in. 30 ft. long.	1 piazza, 3×7 in. 220 ft. long.	
100 rough plank rafters, at 25c. each.....		25.00
360 wall strips, 2×4 in., 12 ft., at 11c. each.....		39.60
308 hemlock boards, 10 in.×13 ft., at 18c. each.....		55.44
250 mill-worked flooring boards, 9-in., at 30c. each.....		75.00
130 furring strips, 1×2 in., 13 ft., at 5c. each.....		6.50
31 squares of tin, at \$8.50 per square.....		263.50
16 windows, 1st story and tower, complete, at \$16 each.....		256.00
12 cellar windows, complete, at \$8 each.....		96.00
13 dormer windows, complete, at \$20 each.....		260.00
Cornices, principal and deck.....		130.00
Piazza stoop and wing finish (except tin), complete.....		300.00
Finial on tower.....		8.00
Stairs, complete, \$100.00; 38 doors, at \$10 each, complete, \$38.....		480.00
Finish in closets.....		25.00
Mantels and shelves (of marble).....		100.00
Range (with elevated oven and water back).....		80.00
Plumbing and gas-pipes.....		220.00
Nails and anchors.....		27.10
Painting, \$200; Cartage, \$30.....		230.00
Carpenter's labor not included in the completed works.....		250.00
Incidentals.....		51.42
Total cost, complete.....		\$4,000.00

DESIGN XXXIV.

COUNTRY RESIDENCE COSTING \$4,750.

On the next page is a perspective view of a residence built for Dr. B. Clark, of Washington, Pa., from special designs made by me in 1876. The style and general arrangements are similar to the one built for Dr. McClure, last described, with the addition of a side extension or office, and the completion of rooms in the basement for laundry purposes, and a laboratory. This Building is substantially constructed, and tastefully finished throughout. The height of the ceilings in the first story are 12 feet, in the second 10 feet, and for the basement 8 feet. It has two heaters, four open grates, a range, complete apparatus in bath rooms, and distributing pipes for cold and hot water. The principal rooms are frescoed, all others are kalsomined. A Reservoir constructed in

the rear part of the cellar, and provided with running spring water, is arranged as a receptacle for milk cans, and supplies the Fountain shown in the front lawn (this fountain, owing to the sloping surface of the grounds, is several feet below the foundations of the house).... Dr. Clark moved into his new house during the first week in

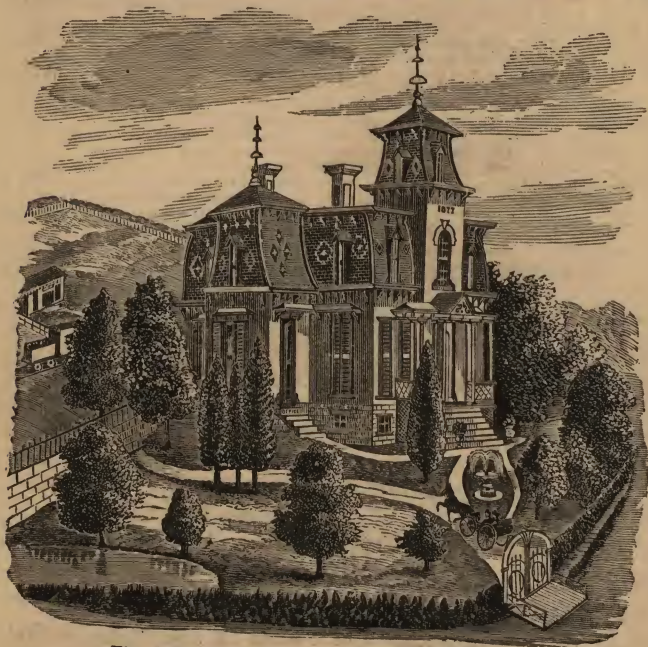


Fig. 149.—ELEVATION OF COUNTRY RESIDENCE.

February last, and writes with reference to it, that “all in all it is the most tasteful in outside appearance, convenient, and economically constructed building in this section, and attracts a great deal of attention.”

The cost of this building, everything complete, was \$4,750.

DESIGN XXXV.

A HOUSE COSTING \$4,000.

These plans were designed for a suburban residence, to take the place of one recently destroyed by fire. The original structure was cubiform in outline, resembling a huge box ; with unbroken facades, and flat roof, destitute



Fig. 150—ELEVATION OF FRONT OF HOUSE.

of beauty, and in strange contrast with the tasteful surroundings. The owner desired to use the old foundations, still in fair condition, without disturbing the grounds, underlying pipes, etc., and thus retain the nearly square ground plan, but a building with an exterior agreeing with the surroundings. While the main object in presenting this design, is to show that the ground plans do not necessarily determine the style of exterior dress, its general arrangement and character will be found to deserve favorable consideration.... ELEVATION. (fig. 150.)

—There is a constant demand for “Mansard Roofs,” arising from an aspiration for structures signifying originality and progressiveness. The animated features of this style accord with activity, rather than of retirement, and adapt it to prominent situations, skirting the more public thoroughfares. The objections to such roofs result from their frequent misapplication. They are manifestly inappropriate for retired or secluded situations, or for persons of purely domestic tastes. They also lose their identity and expressiveness when duplicated in close and continu-

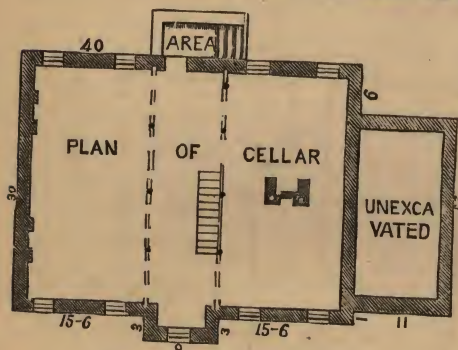


Fig. 151.—PLAN OF CELLAR.

ous proximity, as is often done in towns. But this is true of any other style. Variety is the spice of architecture....CELLAR, (fig. 151.)—Height of 8 feet in clear. It has an outside rear entrance, is well lighted, and contains ample space for the furnace, and divisions for coal, vegetables, etc.....FIRST STORY, (fig. 152.)—Height of ceilings, 10 feet. The accommodations are conveniently arranged, and sufficient for a large family. The main entrance from the piazza is through large double doors and a vestibule. The Hall is central and spacious, communicating with the principal rooms, and rear entry, and contains the main stairs, which are unusually wide and easy. The Parlor and Library, divided by large sliding doors, can be used separately, or together as one spacious room when desired. The Dining-room and Kitchen adjoin, and have the necessary pantries, range, pump, sink, and stationary wash-tubs,

ous proximity, as is often done in towns. But this is true of any other style. Variety is the spice of architecture....CELLAR, (fig. 151.)—Height of 8 feet in clear. It has an outside rear entrance, is

with cold and hot water. A Conservatory is entered from the dining-room through double sash doors, adding a cheerful feature to this apartment, where the family spend much of their time. The rear may be reached from the dining-room in three ways—by the main hall and rear entry, or through the kitchen, or most pleasantly through the conservatory. . . . SECOND STORY, (fig. 153.)—Height of ceilings 9 feet. The divisions include a hall, four large chambers with closets to each, a front hall bed-room, and a bath-room. Each of the chambers has windows in two sides, giving opportunity for plentiful light and fresh air. The clear width

of the room sections, (5 yards each), favors the economical cutting of carpets. The main stairs are made continuous to the attic story. The Bath-room is furnished with a bath-tub, wash-bowl, and seat-closet, and with

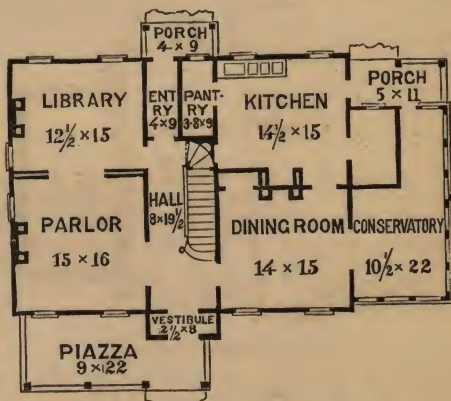


Fig. 152.—PLAN OF FIRST FLOOR.

cold and hot water. . . . CONSTRUCTION.—The foundations, stone-sills, area stoops, framing, inclosing, flooring, plastering, and painting, are similar to those described for Design XIII. Care should be taken in covering the roofs, as the materials used (wood, tin, and slate), are entirely foreign to each other, and can only be placed in *contact*, and indirectly united. The wood should be thoroughly seasoned, to prevent a future disturbance of the exterior covering. All flashings along the sides of the dormers and other uprights should be 10 inches wide, and

double painted before being used. The conservatory is not floored, but is filled in with earth level with the foundation walls. A walk is laid through the center, of $1\frac{1}{8} \times 4$ -inch slats, and the remaining space is devoted to plants. A furnace is placed in the cellar, with pipes to convey warm air to the principal rooms and halls of both stories, and to the conservatory. The pipes and register boxes for conveying warm air to the second story, are placed in

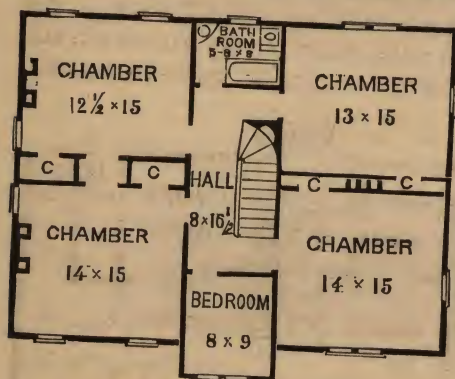


Fig. 153.—PLAN OF SECOND FLOOR

the chimneys while building them. There are open fire-places in the principal rooms, with marble mantles in the first story, and marble shelves in the chambers. Stucco cornices and centers, of appropriate patterns, are put in the principal rooms and hall of the first story. A hall and stairway leading to the tower, is completed in the ATTIC, the other portions of the third story are unfinished, but may be converted into pleasant rooms for school purposes, or chambers, as desired.

ESTIMATE, Cost of materials and labor :

114 yards excavation at 20 c. per yard.....	\$22.80
84 perches stone-foundation, at \$2.75 per perch.....	231.00
60 ft. blue-stone sills, steps, and coping, at 28c. per ft.....	16.80
8,000 brick, furnished and laid, at \$12 per M.....	96.00
1,000 yards plastering, at 28c. per yard.....	280.00
230 feet stucco cornices and centers, at 25c. per ft.....	57.50
8,305 ft. of timber, at \$15 per M.....	124.57
2 girders, 4x8 in. 30 ft. long.	
2 sills, 4x8 in. 30 ft. long.	
2 sills, 4x8 in. 40 ft. long.	
2 sills, 4x8 in. 23 ft. long.	
2 sills, 4x8 in. 11 ft. long.	
9 posts, 4x7 in. 23 ft. long.	
2 posts, 4x7 in. 32 ft. long.	
2 posts, 4x7 in. 12 ft. long.	
2 posts, 4x6 in. 11 ft. long.	
Ties, 4x6 in. 350 ft. long.	
Plates, 4x6 in. 247 ft. long.	
Perlines, 3x8 in. 215 ft. long.	
51 beams, 3x8 in. 25 ft. long.	
15 beams, 3x8 in. 21 ft. long.	
50 beams, 3x8 in. 16 ft. long.	
4 hips, 3x7 in. 14 ft. long.	
Piazza, 3x7 in. 176 ft. long.	
Piazza, 3x5 in. 86 ft. long.	

6 locust posts at 30c., \$1.80 ; 150 joists, at 16c., \$24.....	\$25.80
150 wall-strips, at 11c. each.....	16.50
220 sheathing, at 18c., \$39.60 ; 500 lbs. tarred felting, \$20.....	59.60
400 clapboards, at 12c. each.....	48.00
370 hemlock boards for roof, at 16c. each.....	59.20
14 squares slate, at \$8½ per square.....	119.00
20 squares tin, at \$7½ per square.....	150.00
Cornice materials.....	89.62
335 pieces flooring (9-inch), at 18c. each.....	60.30
Piazas and porches, complete.....	160.00
9 cellar windows, complete, at \$5 each.....	45.00
24 plain windows, complete, at \$12 each.....	288.00
18 dormer windows, complete, at \$16 each.....	288.00
Stairs, complete, \$100 ; 45 doors, complete, at \$10, \$450.....	550.00
Closets, \$30 ; nails, \$20.....	50.00
3 marble mantles, \$75 ; 4 marble shelves, \$25.....	100.00
Range and plumbing.....	260.00
Sky-light in conservatory.....	12.00
Furnace and pipes.....	150.00
Carting, average 1 mile.....	40.00
Carpenter's labor, not included above.....	300.00
Painting, \$220 ; incidentals, \$80.31.....	300.31
Total cost, complete.....	\$4,000.00

DESIGN XXXVI.

A FARM HOUSE COSTING \$5,000.

The plans here given were originally designed for the residence of Mr. F. H. Johnston, Easton, Md. They will interest those desiring a good-sized, comfortable farmhouse..... EXTERIOR, (fig. 154).—The site in this case being midway between the highway and a water front, (facing a tributary of the Chesapeake,) made it desirable to have two main entrances, adapted to either approach, and indicated the position of the kitchen wing at the *side*. The Conservatory is in an angle facing the southeast. The Piazza and Roof Projections are of ample breadth to give abundant shade, and proper effect. As a whole, the outlines are rounded and compact, indicating completeness and strength—always desirable features in buildings of this class..... CELLAR, (fig. 155).—Height of ceiling 8 feet. It has 13 windows, and outside and hatchway doors. Openings in the chimneys provide ventilation. The ceilings are plastered, to prevent the ascent of damp and

unwholesome vapors through the frame-work of the house. FIRST STORY, (fig. 156).—Hight of the ceilings in the main house, 11 ft. 4 in., and in the wing 9 ft. The main entrances lead from the piazzas, through large double doors, to the principal Hall, which is wide, and extends, unobstructed, through the house. The main stairs occupy the space at the right, which is separated by an arch that preserves the continuity of the hall ceil-



Fig. 154.—ELEVATION OF FRONT OF HOUSE.

ing. The ordinary or family entrance is by way of the passage, and is convenient to all the parts of the house in daily use. A private stairway leads from the passage to the second story. The Parlor and Library are separated by sliding doors, and each has a bay and other windows. The Dining-room at the right is pleasantly arranged; it may be entered from the main hall, or through the conservatory, or by the passage, or through the butler's pantry. Wide double sash-doors lead to the conservatory,

and single sash-doors open to the piazza through the passage. The Kitchen has doors leading to the passage, butler's pantry, cellar, and yard, and has three windows. It is provided with a range, pump, boiler, wash-tubs, and sink. The Butler's Pantry is spacious; one end is dresser finished, with counter-shelf and doors above and below. A counter-shelf is also placed at the opposite end, with wash-tray and closet. The sides are shelved around, and have cleats and hooks.....SECOND STORY, (fig. 157).—Hight of ceilings in the main house 10 feet; in the wing 9 feet. The divisions embrace six rooms, six closets, and the required halls. The platform of the main stairs is

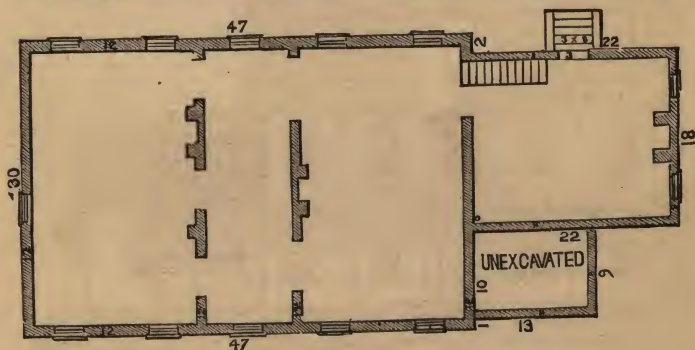


Fig. 155.—PLAN OF CELLAR.

level with the second floor of the wing, and from it a door leads to the wing passage. The Bath-room has a bath-tub, wash-stand, and seat-closet, and a good-sized closet for towelling, etc. All closets have the usual shelving and hooks. Each chamber has marble shelves and stucco trusses.... ATTIC.—The stairs leading to this story are above the main flight, inclosed with narrow ceiling, and have a door at the foot. There are two circular windows in each end gable, and one in each front. The whole is floored, but otherwise unfinished, to be used as an open garret.... CONSTRUCTION.—The excavations are

4 feet deep, and the loose earth thrown out is neatly graded around, leaving three feet of the foundations exposed to sight. The foundations are of hard burned brick, 12 inches thick for the main house, and 8 inches for the wing and conservatory. Brick piers, 12 inches square, are built for the piazza supports. The first story frame-work is beam-filled with bricks, where they rest on the foundation. This prevents draughts of air from entering the house between the foundation and the frame, and

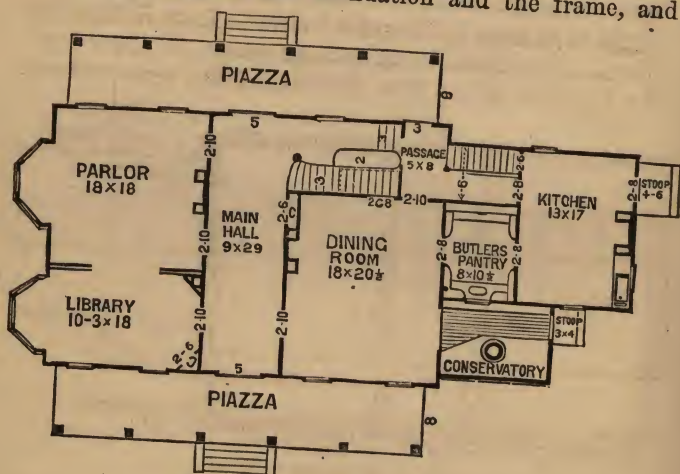


Fig 156.—PLAN OF FIRST FLOOR.

also keeps mice out of the frame at this point—the latter is especially necessary along the lines of the main partitions. The chimneys are of hard brick, arranged with continuous flues from each fire-place to the top. Tin 8-inch pipes, with the necessary elbows and register boxes, are inserted while building, to convey warm air from the cellar to the large chambers in the second story. The frame-work is constructed in the most thorough manner, of sound pine or spruce timber. The siding is of clear pine clapboard, laid on sheathing felt. Cornices of

dressed pine. Principal roofing of cedar shingles. Piazza and bay window roofs of tin. Flooring of narrow yellow pine. The first and second stories are completed in every respect, ready for occupation. Each of the principal rooms and the main hall have stucco cornices and centers. Arches with neat ornamental corbels are built across each bay window, over the L adjoining the main hall, and at the entrance of the passage leading to the bed-room in the second story. All sashes are $1\frac{1}{2}$ -inch thick, and glazed with four lights in each pair. Blinds (outside) are properly hung and fastened to each window above the

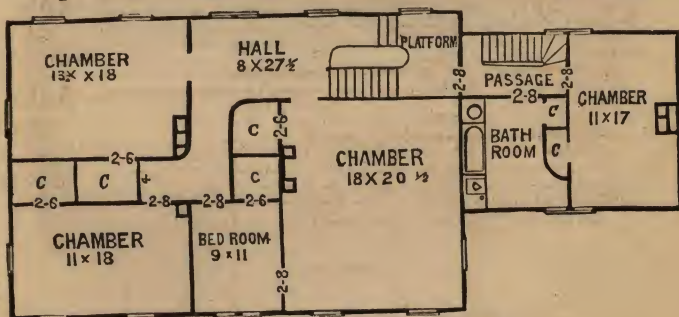


Fig. 157.—PLAN OF SECOND FLOOR.

cellar. The conservatory is substantially constructed of light frame-work, with no superfluous dressing to obstruct the light, and glazed with plain, single-thick glass at the sides, and ribbed glass for the roof, has a narrow walk of slat-work leading from the dining-room door, and is arranged to be heated in winter from a furnace in the cellar. All parts usually painted, have two coats of best paint, of color and materials selected by the owner.

ESTIMATE, cost of materials and labor :

268 yards excavation, at 20c. per yard.....	\$53.60
50,000 bricks, (furnished and laid,) at \$12 per M.....	600.00
88 ft. blue-stone sills, at 30c. per ft.....	26.40
1,300 yards plastering, at 23c. per yard.....	361.00
175 " " cellar ceiling, at 16c. per yard.....	28.00
330 ft. cornices, complete, at 20c. per foot.....	66.00
4 centers, complete, at \$4 each.....	16.00
14,300 ft. of timber, at \$14 per M.....	200.20

Sills, 4×10 in. 276 ft. long.	50 beams, 3×10 in. 19 ft. long.	
Ties, 4×6 in. 490 ft. long.	8 beams, 4×10 in. 19 ft. long.	
Plates, 4×8 in. 133 ft. long.	10 beams, 3×10 in. 18 ft. long.	
Perlines, 4×9 in. 214 ft. long.	1 beam, 4×10 in. 18 ft. long.	
Ridges, 3×9 in. 67 ft. long.	11 beams, 3×9 in. 18 ft. long.	
Ridges, 3×7 in. 20 ft. long.	23 beams, 3×9 in. 19 ft. long.	
Gables, 4×6 in. 200 ft. long.	28 beams, 3×10 in. 10 ft. long.	
4 posts, 4×8 in. 26 ft. long.	14 beams, 3×9 in. 10 ft. long.	
8 posts, 4×8 in. 23 ft. long.	73 rafters, 3×6 in. 25 ft. long.	
4 posts, 4×7 in. 13½ ft. long.	34 rafters, 3×5 in. 15 ft. long.	
2 posts, 4×7 in. 12 ft. long.	Braces, 3×5 in. 240 ft. long.	
175 joists, at 13c, \$22.75; 400 wall strips, at 10c., \$40.		62.75
800 lbs. felt, at 4c., \$32; 800 siding, clapboards, 10c., \$80.		112.00
Cornice materials.		120.00
500 rough roofing, at 14c. each.		70.00
12,000 singles, at \$10 per M.		120.00
11 squares tin, at \$9 per square.		99.00
450 ft. valleys, gutters, and leaders, at 10c.		45.00
5,366 ft. flooring, at 3c. per foot.		160.98
13 cellar windows, complete, at \$6 each.		78.00
30 plain windows, complete, at \$12 each.		360.00
2 bay windows, complete, at \$60 each.		120.00
2 dormer windows, complete, at \$20 each.		40.00
4 stairs, complete.		150.00
38 doors, complete, at \$12.		456.00
Piazza and stoops, exclusive of floors and roofing.		250.00
Conservatory, complete.		150.00
Mantles, complete.		102.00
Pantry and closets, complete.		75.00
Nails, \$24; Carting, average 1 mile, \$50.		74.00
Range and plumbing, complete.		250.00
Carpenter's labor, not included above.		450.00
Painting.		272.00
Incidentals.		29.07
Total cost, complete		\$5,000.00

DESIGN XXXVII.

A HOUSE COSTING \$7,000.

The accompanying plans were designed for a suburban residence erected during the past year by Mr. Bernhard Greeff, at College Point, Long Island, N. Y. The general outlines were determined with especial reference to the location—which is elevated, overlooking the East River to the north and west, Flushing bay, and the village to the south, and with an eastward frontage to the street, giving pleasant views in all directions. With these points fixed, it is easy to see the propriety of placing a broad side to the bleak or northern exposure, and putting such breaks or angles as are required in the more sheltered

directions.....EXTERIOR, (fig. 158.)—The style of this example is homelike, and shows to the best advantage when placed in comparison with those of more fanciful design. Sufficient irregularities are made in angles and projections to give variety. The details shown in the front finish are continued around the sides and rear. The



Fig. 158.—ELEVATION OF FRONT OF HOUSE.

hight of the rear wing is one story less than the main house. While the appearance of this house is agreeable on every side, the most pleasing is from the southerly direction....CELLAR, (fig. 159.)—Hight of ceiling 7 feet, of which 4 feet are above ground. All parts are well lighted with windows, except the hall, which has a sash-

door with iron guard. The Laundry has an open stairway to the kitchen, and is provided with wash-tubs. A water-closet is placed under the stair. A furnace is placed in the northern division of the cellar, with pipes for conducting warm air to each room and hall in the two stories of the main house, and to the bath-room.... FIRST STORY, (fig. 160.)—Hight of ceilings in main house 11

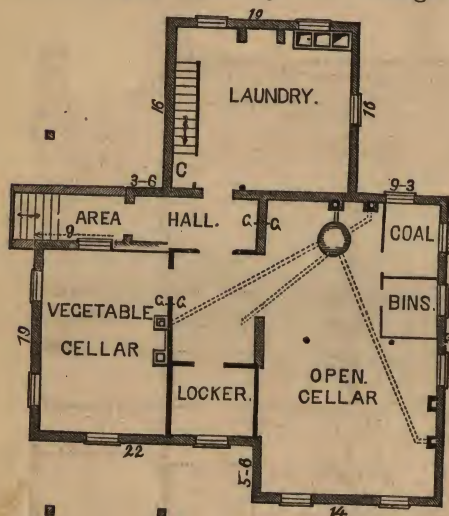


Fig. 159.—PLAN OF CELLAR.

feet; in rear wing 8 feet 5 inches. The Front Entrance is through a vestibule leading to the main hall. The Hall is large, contains the principal stairs, with a closet under them, and communicates with the parlor, sitting-room, and rear entry. The Sitting or Family-room is arranged to be the

pleasantest apartment, has double windows front and rear, (the rear ones opening to the floor), and a large bay-window giving an outlook in three directions. Each of the principal rooms has grates for open fires, side registers leading from the furnace, and marble mantles. The Rear Entry communicates with the several apartments, and the rear piazza. The Kitchen has an elevated range, boiler, sink, drain-board, two closets, and enclosed stairways leading down to the laundry, and up to the second story;

it communicates with the dining-room through the butler's pantry, the latter is "dresser-finished" with sash-doors, copper wash-trays, etc. SECOND STORY, (fig. 161.)—Height of ceiling in main house 10 feet, in wing 9 feet, with side breasts 5 feet. The floor of the wing is level with the platform of the main stairs. The full ceiling above this platform is arched over, and conceals the roof angle of the wing. An inside and smaller arch leads to the passage beyond. Both of these arches may be seen from the lower hall, and are pleasing features. An arch between the closets at the opposite end of the hall makes an alcove to the hall window. The room divisions are similar to those of the first story. Closets

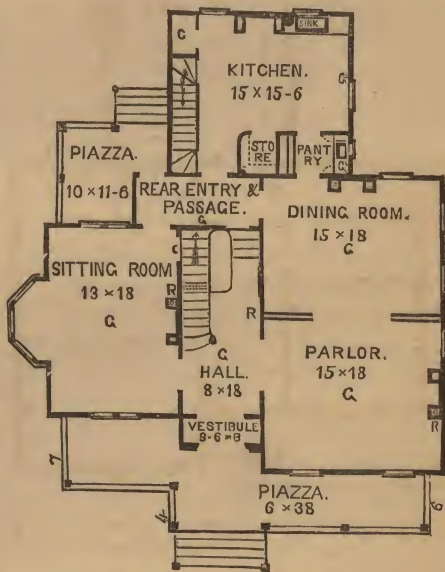


Fig. 160.—PLAN OF FIRST FLOOR. .

are provided for each chamber. The Bath-room is conveniently arranged and furnished. . . . ATTIC.—Height of ceiling 9 feet, with breast-walls 3 feet. There are 3 good-sized chambers, a hall, and 7 closets in this story. Four dormer and three gable windows are provided. . . . CONSTRUCTION.—The time allowed for the erection of most buildings is too limited. Although this house was built by contract, no haste was enjoined, six months being

allowed for its completion, giving the builder an opportunity of selecting the materials and workmen, and of applying the parts in their proper time and order. The exterior foundation walls, to the level of the ground, are of broken stone, 18 inches thick; the balance of hard brick, 12 inches thick. The frame is of full-sized timber; all beams and studding are placed 16 inches from centers. The siding-boards are 6 inches wide, rabbeted,

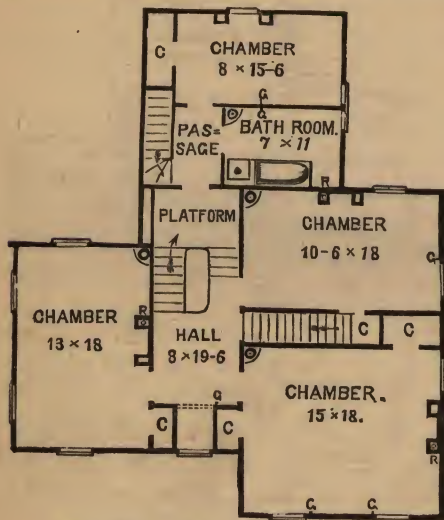


Fig. 161.—PLAN OF SECOND FLOOR.

and laid 5 inches to the weather, on stiff tarred "sheathing-board," weighing $1\frac{1}{2}$ pound to the square yard. The exterior frame is "filled in" with pale brick. The main and wing roofs are covered with Keystone slate on tarred felt over hemlock boards. The main gutters are of double cross tin, laid in with the slate as shown in Design V. The roofs of the piazzas, and bay-window, are of single cross tin. The cellar bottom is concreted with hydraulic cement and gravel, 3 in. thick. The laundry and cellar hall have the usual wide flooring, and are thoroughly plastered and finished. The partitions in the cellar, and the coal-bins are of dressed plank. All the floors in the two principal stories are double, the first being of ordinary dressed flooring—the second is "*parquet*" flooring laid of $\frac{3}{4} \times 2\frac{1}{2}$ -

and laid 5 inches to the weather, on stiff tarred "sheathing-board," weighing $1\frac{1}{2}$ pound to the square yard. The exterior frame is "filled in" with pale brick. The main and wing roofs are covered with Keystone slate on tarred felt over hemlock boards. The main gutters are of double cross

inch yellow pine, and black walnut. The black walnut is used only in the borders and centers. These borders are made by laying from five to eight courses of alternate woods all around the rooms, ending at the hearths. The widths and arrangements are changed slightly in the different apartments, to give variety. These floors are intended to dispense with the use of carpets; rugs, covering the central portions of the floor, being adopted in their place. Unlike the stationary carpet, these may be easily removed for airing, and the floors cleaned daily if desirable. The three upper stories are hard-finished, on two coats of brown mortar. Each room and hall in the first and second stories of the main house have suitable stucco cornices and centers. The interior wood-finish is complete, all of clear and seasoned materials. Bronzed hardware is used in the first story, and porcelain in the balance of the building. Gas-pipes are inserted for thirty lights, properly distributed through the house. Five bells are included in the fittings. All wood, tin, and exterior brick work has two coats of best paint. The outside doors, and the halls, are grained in imitation of hard woods. The stair rails, door saddles, and the hard-wood flooring, are rubbed with linseed oil. The following are the estimates of the *cost*, as per contracts :

Mason work, completed.....	\$1,650.00
Roofer's work,	337.00
Carpenter's work, "	3,573.00
Plumber's work, "	590.00
Furnaces, "	200.00
Mantles, "	300.00
Painter's work, "	350.00
Total.....	\$7,000.00

DESIGN XXXVIII.

A HOUSE COSTING \$8,000.



Fig. 162.—PERSPECTIVE VIEW OF HOUSE.

These plans were designed for a large and convenient house, arranged to embrace nearly all of the modern improvements. Figure 162 is the perspective view of a house recently built from these plans, for Mr. J. M. Peck, at Flushing, L. I. The general characteristics of the exterior are expressive of refinement and cheerfulness. There is considerable novelty in some of the outlines and details of construction. It will be seen that the Tower is five stories high, or two stories above the attic of the main

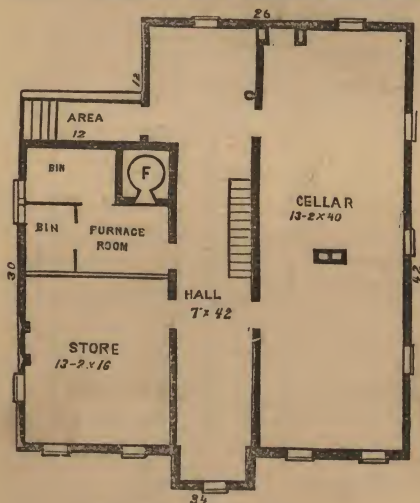


Fig. 163.—PLAN OF CELLAR.

house, affording a lofty outlook. All the long horizontal lines of cornice are broken up by truss-heads, which are ornamental in themselves, and give relief from the depressing appearance of such long lines. The Dormer Windows of the main house have projecting pediments, with turned columns resting on the outer edge of the main cornice. The Inclosing of this house is the same as that described for Design XXXII. The Mansard part of the main roof and tower is covered with dark slate, laid on sound boards, covered with felt. All other roofs are tinned in the best manner. . . . The CELLAR extends under the whole house, and has outside and cross-walls of hard brick, which, with the chimneys and area, are built as described in XXXII. A *Furnace* is put in at *F*, and enclosed with brick, and 10-inch tin pipes are

provided to convey hot air to the parlors, library, dining-room, and hall of the first story, to five rooms in the second story, and to the tank-room in the attic story.... The FIRST STORY contains a large Hall, Parlor, Library, Dining-room to be used as a Living-room, Kitchen, Butler's and other Pantries, Wash-room, two flights of Stairs, the principal one in the main hall, and a private one adjoining the wash-room. The Main Hall is 7 feet wide, and is entered from the piazza through heavy front and vestibule double doors. The front doors are full high, and have quarter-circle plate glass "skylights" in them. The vestibule doors have plate glass upper panels, with transom, and half-circle head-light. Double doors

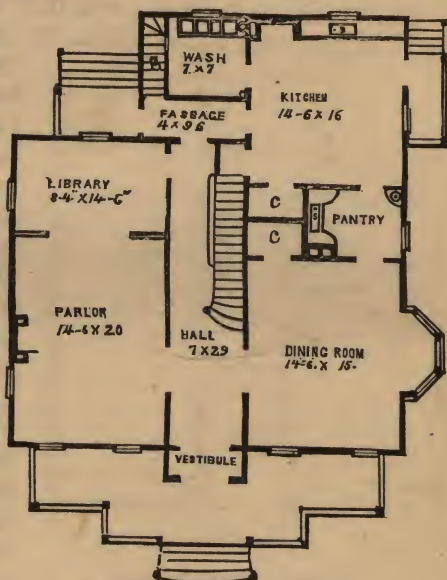


Fig. 164.—PLAN OF MAIN FLOOR.

open from the hall to the parlor and to the dining-room, and large sliding doors separate the parlor from the library. The *Dining-room* has a large bay-window, marble mantel, china closet, and adjoins the butler's pantry. The *Kitchen* is arranged with such conveniences as would delight the most enthusiastic housekeeper; has large closets, range, sink, cold and hot water, adjoins the wash-room, cellar stairway, and private passage, and com-

municates with the dining-room through the butler's pantry. The Range has an elevated oven, warm closet, and water-back. To secure a perfect ventilation, a large register is placed in the flue of the chimney, which creates so strong a draft that the air in this room can all be changed in a few minutes. The left-hand flue of the kitchen chimney contains the pipes that convey warm air from the furnace to the bath and tank rooms. The wash-

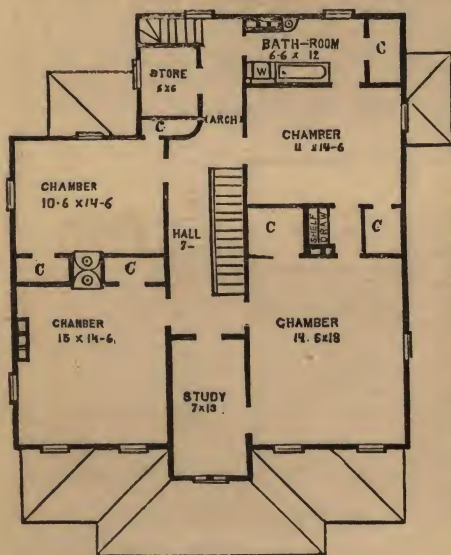


Fig. 165.—PLAN OF SECOND STORY.

room contains the copper boiler and wash-tubs, and has a closet under the private stairs. The sink is large, and is provided with large drain-boards at each side, and a row of closets underneath. The Butler's Pantry has complete fittings of drawers, shelving, oval copper wash-tray, and washstand with marble top, and is provided with cold and hot water. A Passage or private hall is arranged to connect with the principal hall, kitchen, private stairway, and rear entrance; by this plan the principal housework can be done without intruding in any way on the main hall or principal rooms of the house.... SECOND STORY. This story contains a good-sized hall, 4 large chambers, a private study, bath-room, store-room, six large closets, and private stairway. The

room contains the copper boiler and wash-tubs, and has a closet under the private stairs. The sink is large, and is provided with large drain-boards at each side, and a row of closets underneath. The Butler's Pantry has complete fittings of drawers, shelving, oval copper wash-tray, and washstand with marble top, and

principal flight of stairs is made continuous from the first floor to the attic; an arch is placed across the narrow part of the hall in this story, near the first landing of the principal stairs, and is in full sight from the hall below, imparting a cheerful and finished appearance. . . . *ATTIC, or Third Story*—This story is finished throughout, and is divided into a hall, two large chambers, with closets to each, tank-room, and large attic. The stairs to the tower are closed in, and have a door at the foot. The hall is lighted through a sash-door from the tank-room. The large attic-room at the right has two doors opening from the hall, and may be divided into two rooms if required. A large upper room, where noise will not disturb the occupants of the lower parts of the house, will always be found valuable for school and play-room purposes, especially in cold or stormy weather, and when supplied with a table, benches, maps, books, and apparatus for instruction and entertainment, will afford the younger members of the family opportunity for development and exercise. . . . *GENERAL REMARKS*.—Many people, who would adopt this general plan, might conclude that the style of the exterior is too elaborate and costly. It must be obvious to any one that the internal arrangements, and ground plan of houses, should be made to conform to the necessities and requirements of those who are to oc-

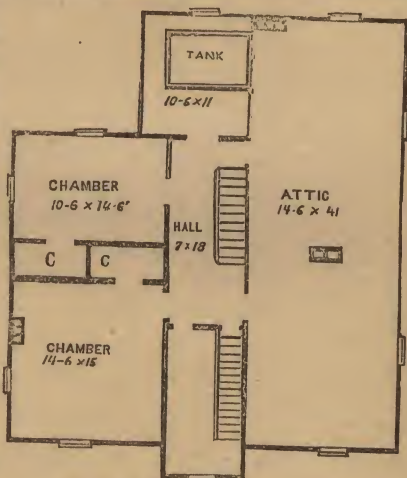


Fig. 166.—PLAN OF ATTIC.

poses, especially in cold or stormy weather, and when supplied with a table, benches, maps, books, and apparatus for instruction and entertainment, will afford the younger members of the family opportunity for development and exercise. . . . *GENERAL REMARKS*.—Many people, who would adopt this general plan, might conclude that the style of the exterior is too elaborate and costly. It must be obvious to any one that the internal arrangements, and ground plan of houses, should be made to conform to the necessities and requirements of those who are to oc-

copy them ; and these parts being of the first importance, should receive the first consideration. Such *ground plans*, however, do not decide, or even indicate, the style, character, or expense, of the outside *dress* that may be put upon them. Different people have entirely different characters, tastes, and resources, and the external appearance of their homes should signify those general qualities and characteristics, and also accord with, and conform to, all the circumstances of location, and relation. . . . The ESTIMATE in detail provides for all work to be done in a substantial manner, of the usual materials. The exterior and interior wood finish is of clear pine lumber. The *Plastering* is hard-finished, on two coats of brown mortar. Appropriate *Cornices*, *Centers*, and *Panels*, in stucco, are intended for the hall, parlor, library, dining-room, and the two front chambers in the second story. *Gas-pipes* are inserted in the frame-work of the house, with connections arranged for 37 attachments. These are easily put in during construction, and even when the house is located far from any city or village having gas, there is strong probability that ere long we shall have convenient apparatus for making and supplying gas to isolated dwellings. . . . PLUMBING is provided as described in Design XXXII, except that the plumbing required for the butler's pantry, is here added. *Bells* are put in, with their wires running through zinc tubes concealed in the walls. The front-door pull leads to a gong in the kitchen. The dining-room has a bell leading to the school-room in the attic. Each chamber in the second story, and the bath-room, has a bell leading to the kitchen, and the largest chamber has a bell leading to the attic. *Speaking-tubes* are provided for communication between the second story, hall, and bath-room, with the kitchen. . . . PAINTING.—The body of the outside is in warm-gray ; the principal outside trimming in pure white, with thin separating lines in light drab, and blinds in dark-bronze color. All wood,

tin, and brick work, usually painted, both inside and outside, has two coats of the best lead and oil. All doors are grained—and all hard-wood, such as stair-rail, balusters, and door-saddles, are rubbed in oil.

ESTIMATE:

216 yards excavation, at 20c. per yard.....	\$43.20
32,000 hard brick, at \$9 per 1000.....	288.00
6,000 pale brick, at \$5½ per 1,000.....	33.00
Materials for plastering, and lath.....	300.00
70 ft. stone steps and coping, at 30c.....	21.00
Labor for all the mason work.....	600.00
13,258 ft. timber, at \$15 per M.....	198.87
1 sill, 4×8 in. 242 ft. long.	12 posts, 4×8 in. 36 ft. long.
1 tie, 4×6 in. 484 ft. long.	1 plate, 4×6 in. 360 ft. long.
2 posts, 4×8 in. 42 ft. long.	112 beams, 3×8 in. 16 ft. long.
2 posts, 4×8 in. 19 ft. long.	56 " 3×8 in. 22 ft. long.
1 deck plate, 3×8 in. 156 ft. long.	32 " 3×8 in. 12 ft. long.
6 hips, 3×10 in. 22 ft. long.	28 " 3×8 in. 8 ft. long.
1 sill (piazza) 4×7 in. 114 ft. long.	8 " 3×8 in. 18 ft. long.
1 plate " 3×8 in. 90 ft. long.	52 " 2×6 in. 13 ft. long.
1 beam " 3×6 in. 60 ft. long.	1 " 2×7 in. 28 ft. long.
300 joist, 3×4 in. 13 ft. long, at 22c. each.....	66.00
350 wall strips, 2×4 in. 13 ft. long, at 11c. each.....	38.50
928 tongued and grooved sheathing boards for sides and roofs, at 25c. each.....	232.00
300 lbs. tarred paper, at 5c. per lb.....	15.00
663 novelty clear siding-boards, at 30c. each.....	198.90
416 ft. main cornices, water table, corner boards.....	416.00
29½ squares of tin roofing, at \$8 per square.....	236.00
17 squares of slate, (no openings allowed) at \$10 per square.....	170.00
13 cellar windows, complete, at \$12 each.....	156.00
1 bay-window, complete.....	100.00
30 windows, first and second story, and tower, complete, at \$17 each.....	510.00
13 dormer windows, complete, at \$23 each.....	299.00
3 piazzas, (except tinning), complete.....	400.00
1 balcony, (except tinning,) complete.....	35.00
1 hood, (except tinning), complete.....	50.00
480 flooring-boards, 6-inch, at 25c each.....	120.00
160 flooring boards, 9-inch.....	46.00
Stairs, complete.....	200.00
14 closets and pantries, complete.....	130.00
50 doors, complete, at \$15.20 each.....	760.00
4 marble mantles, complete.....	125.00
Furnace and range, (set and piped,) complete.....	400.00
Plumbing, complete.....	300.00
Painting.....	400.00
Carpenter's labor, not included above.....	800.00
Cartage, average 1 mile.....	115.00
Incidentals.....	197.53
Total cost of materials and construction.....	\$8,000.00

D E S I G N X X X I X .

CONTIGUOUS HOUSES, COSTING \$1,000 EACH.

These plans were originally prepared for six connected cottages, just completed, for Mr. Fred. Storms, (manufacturer), at Bayside, L. I. They were designed to give the largest amount of accommodation, convenience, and finish, possible, for one thousand dollars each, and are especially adapted to rapidly filling localities, or manufacturing districts. By this system of building in blocks, a very large saving is made in materials and labor, at first, and little expense is required to keep them in order afterwards. Where desired, the introduction of gas, or water-pipes, may be made, from one to the other direct, at small cost. Such connected houses are really more comfortable than separate ones, as they protect each other at their sides from the extreme changes of the outward temperature; and are therefore warmer in winter, and cooler in summer. The site chosen in this case is elevated, and has a westward frontage, securing the important advantages of good drainage, and the admission of direct sunlight to every room. . . . EXTERIOR, (fig. 167).—Building in blocks is a favorite mode with many large owners of village property. The chief objection to a majority of such erections is their formal and stiff appearance, arising from a monotonous uniformity, a repetition of parts, and the overpowering predominance of horizontal lines—partaking too much of the city-street style. To overcome such objections in this design, simple but effective irregularities were introduced, so that really no two dwellings are alike. The sky-lines are broken and varied; the main roofs have pedimented projections—with Mansard sections intervening; all horizontal lines are either shortened or omitted, leaving vertical ones to prevail, and the window openings are varied in their form and distribution. While these several features are essential to the good ap-

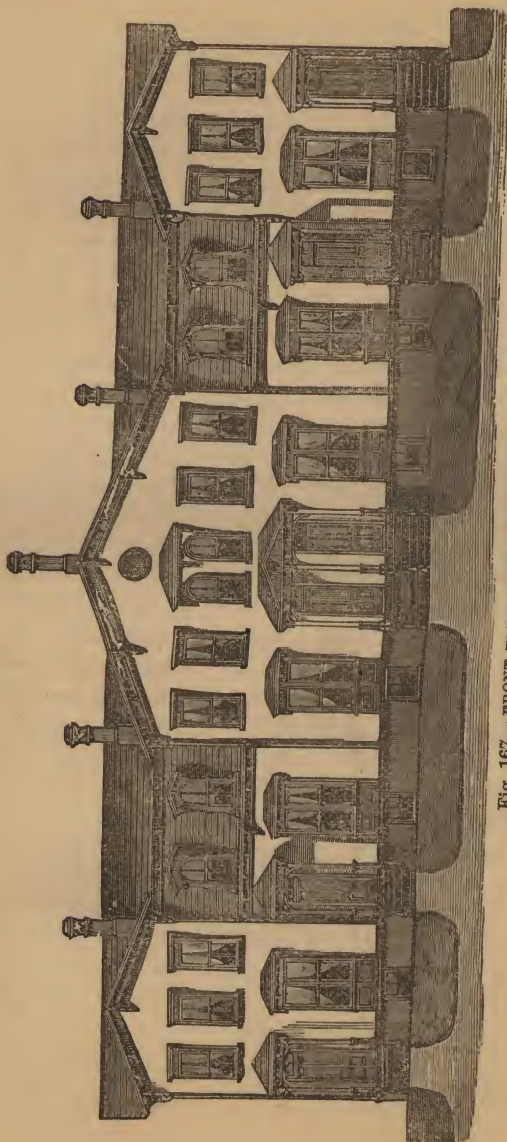


Fig. 167.—FRONT ELEVATION OF ROW OF SIX HOUSES.

pearance of such buildings, giving them the pleasing elements of variety and picturesqueness, they do not add very materially to the cost. Cottages designed for simple dwellings, whether built apart or connected, should, as far as possible, preserve their identity as cottages, and if destined for undulating and picturesque situations, should be outlined to accord with their surroundings. INTERIOR. — The

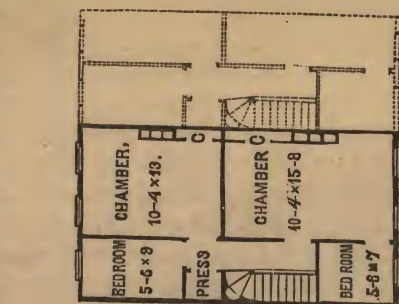


Fig. 170.—PLAN OF SECOND FLOOR.

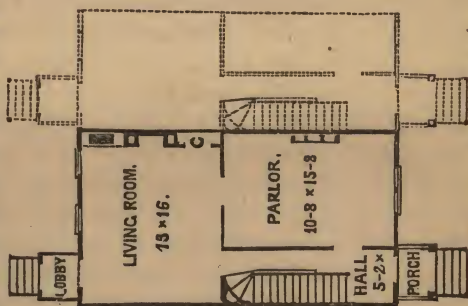


Fig. 169.—PLAN OF FIRST FLOOR.

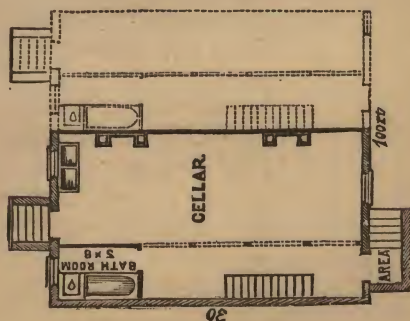


Fig. 168.—PLAN OF CELLAR.

following description of rooms has reference to the house at the extreme left; its relation with the adjoining one is shown by the dotted sketch at the side. All have equal accommodations; this and two others are similarly arranged, the remaining three have their sides reversed.

.... CELLAR, (fig. 168.)—Hight of ceilings $6\frac{1}{2}$ feet. It is thoroughly floored, has outside entrances front and rear, and being well out of ground, is light and airy, and is adapted to general use for the coarser work. Bins for coal are placed where they may be readily filled from the front window. One corner is partitioned off for a bath-room and water-closet. The window to the latter is shielded by a latticed inclosure beneath the rear lobby, adding to its privacy. The rear area not being protected by the rear stoop, has hatchway doors to be used in stormy weather. The Stairs lead from near the front door, to the main hall of the first story..... FIRST STORY, (fig. 169.)—Hight of ceilings 10 feet. A hall, parlor, and living-room are embraced in the divisions. The Hall is entered from a neat porch, contains the main stairs, and leads to the parlor, living-room, and the cellar stairs. The Parlor is pleasantly arranged, with double windows in front, has neat stucco cornices and centers, and a marble mantle. The chimney-breast is placed to allow sufficient space between it and the central partition, for a piano, or other large piece of furniture. The Living-room is of good dimensions and shape, has two windows, a closet, a large fire-place, and a sink. The door leading to the rear lobby has glass upper panels, admitting additional light in the room in pleasant weather, when the lobby door will be likely to stand open, and through it the lobby will be lighted at night from within. The Main Stairs, leading to the second story, are of the "quarter-circle" pattern, and are neatly finished with hard-wood railing, with a niche above..... SECOND STORY, (fig. 170.)—Hight of ceiling 9 feet. This story is divided

into a small hall, two chambers, two bed-rooms, and three closets. Each of the rooms is well lighted, and chimney-breasts, with marble shelves, and stucco trusses are finished in each chamber. . . . CONSTRUCTION.—The average depth of the excavations below the surface is three feet. The Foundation walls are of brick work, 8 inches thick, those for the exterior are 7 ft. 4 in. high, showing an average of 4 ft. above the final grades. (In this particular case, the site being elevated, only 4 inches of additional filling was required in the grades, the balance of the loose earth being used to fill more depressed grounds). All interior cross-walls of brick are omitted, their places being supplied with brick "footings" and frame-work. These brick footings are laid in trenches 4 inches below the cellar bottom, and are 8 inches high and wide. Sills of 4×6 timber are laid on the center of these footings (edgewise), leaving a margin of 2 inches on each side for the support of the ends of the cellar-floor beams. Girts are put above the sills (also of 4×6 timber), anchored to, and level with the outer foundation walls, and are supported by studding and braces, thus forming an inexpensive and substantial division and bearing between the cellars. The principal frame is of regular-sized sawed timber, thoroughly framed and braced. The sidings are of clear pine clapboards, laid on hard-rolled sheathing-felt. The upper roofs are covered with IC charcoal tin, "tern-plate," and the Mansard sections are slated on hemlock boards. The interior flooring is of 7-inch milled spruce; outside flooring of 4 1/2-inch milled pine. To prevent the transmission of sound, all the main divisions of frame-work between the houses are deafened by a filling of pale brick and mortar. The cellar ceilings and side walls are white-finished on one coat of brown mortar. All other plastering is hard-finished on two coats of brown mortar. Circular ventilators are placed in each gable, and two ventilators made to resemble the chimney tops are placed

on the higher or central ridge of the roof, to allow for the escape of heated air from beneath the roofing. All windows have 1½-inch sash, of four lights each; those in the cellar are hung with butts; all above are balanced with iron weights, and have outside blinds. The doors are first quality, four-panelled. The interior casings are of clear pine, and are neatly moulded, and the parlor windows have panelled backs. The Painting is done as described in Design XIII, except that the blinds are of a chocolate color.

ESTIMATED cost of materials and labor:

Mason's materials and labor.....	\$1,350.00
Lumber of all kinds.....	1,150.00
Tinning and slating, (complete).....	300.00
Rolled lining, \$30; porches and lobbies, \$275.....	305.00
Cornice materials, (prepared at mill).....	120.00
Sash, doors, and blinds.....	400.00
Stairs, with outside steps, with railings.....	500.00
Shelving and sundries.....	325.00
Nails, \$65; hardware, \$300.....	365.00
Painting, \$300; cartage, \$85.....	385.00
Carpenter's labor, not included above.....	800.00
Total cost of six Dwellings.....	\$6,000.00

Mr. Storms added about \$1,000 to the total cost of six buildings in plumbing, sewers, gas-pipes, and in fencing separate front and rear yards, to each house. As these improvements are not generally required, they are omitted in the estimate.

DESIGN XL.

CONTIGUOUS HOUSES, COSTING \$2,000 EACH.

These designs were prepared for a block of five houses erected last year for Mr. Geo. Storms, facing one of the principal avenues at Bayside, L. I. The entire structure is 90 feet long, running north and south, and occupies half the avenue end of a village ground plot. One end section being a "corner," has a portion devoted to busi-

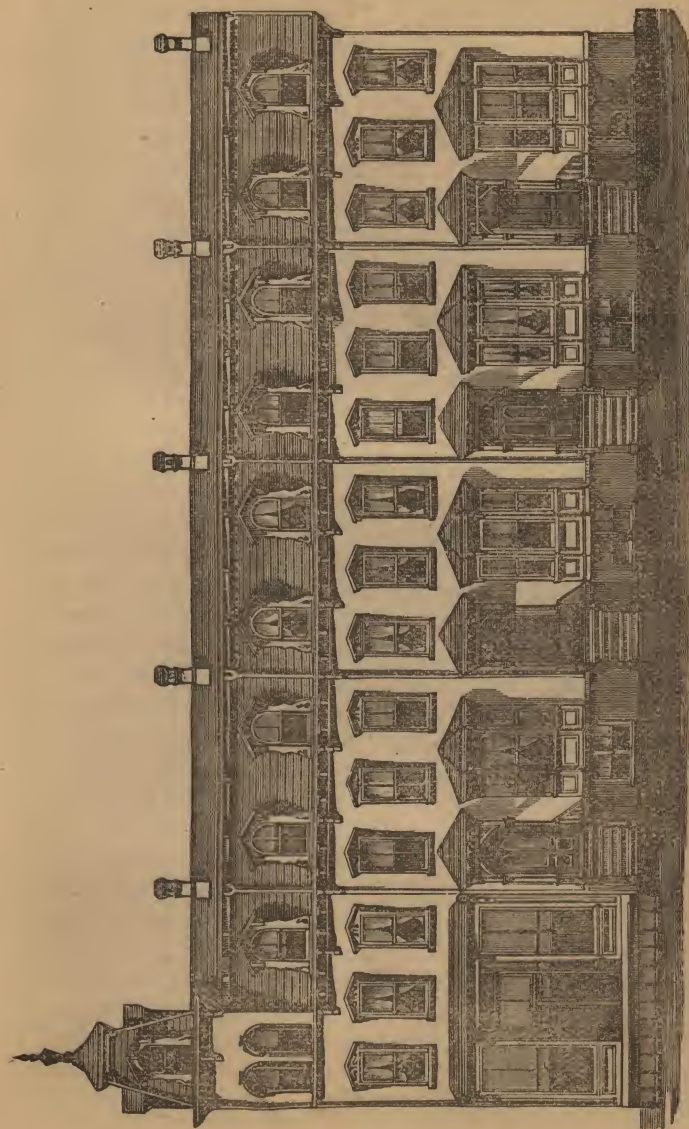


Fig. 171.—ELEVATION OF CONTIGUOUS HOUSES AT BAYSIDE, L. I.

ness purposes, the balance of the building is used exclusively as residences. They are thoroughly furnished with ranges, heaters, pipes for cold and hot water, and gas, and complete sewerage. The desirability of these buildings is proved by the fact that all of them were engaged, and several occupied, before they were fully completed....

CELLARS, (fig. 172.)—Hight of ceilings, 7 feet. Each is well lighted, and has outside entrances from the street and from rear yards. A hall, laundry, and water-closet are floored and otherwise finished off; the balance is unfinished, to be used as a cellar for fuel and vegetables. The Laundry has a set of stationary wash-tubs, with cold and hot water. The Water-closet has an outside door leading from the rear yard, (this is designed to obviate the necessity and unsightliness of the usual out-buildings). The Fire-places shown are left open, and have continuous flues the whole hight of the chimneys. These flues being heated through contact with the upper fires, insures a thorough ventilation of this story....

ELEVATION (fig. 171.)—This building appears well from all directions, is imposing in outline, animated in details, and nicely proportioned—the hight agreeing with its breadth; the openings and dressings are changed in each story, to give diversity, the whole being well suited to its very public and prominent situation. The “corner” building has an observatory extending above the main roofs, indicating its terminal position, and adding an agreeable feature of irregularity in the sky-lines. The street end at the rear of the tower has a Mansard roof with two dormers; the opposite end shows a full pediment....

FIRST STORY, (fig. 173.)—Hight of ceilings in four houses, 10 feet. The floor in the corner building is lowered $2\frac{1}{2}$ feet, making that part $12\frac{1}{2}$ feet in the clear. A hall, parlor, dining-room, and kitchen, are finished in each of the four houses, and a store, kitchen, and entry, in the corner building. Each of the parlors has a large bay-window,

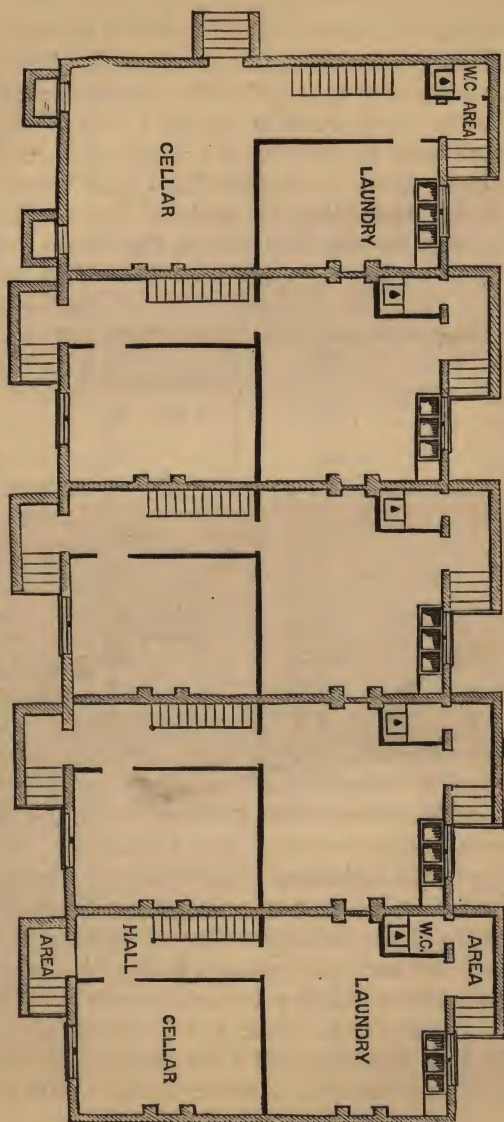


FIG. 172.—PLAN OF CELLARS OF CONTIGUOUS HOUSES.

and is divided from the dining-room by sliding-doors. The Dining-rooms have two closets each. The Kitchens are conveniently arranged with closets, ranges, boilers, and sinks. The Store is fair-sized, has a double door entrance from the avenue, and has a wide stairway leading directly from it to the cellar. The Kitchen at the rear is for the use of the parties doing business in the store. The Family Entrance to the corner building is

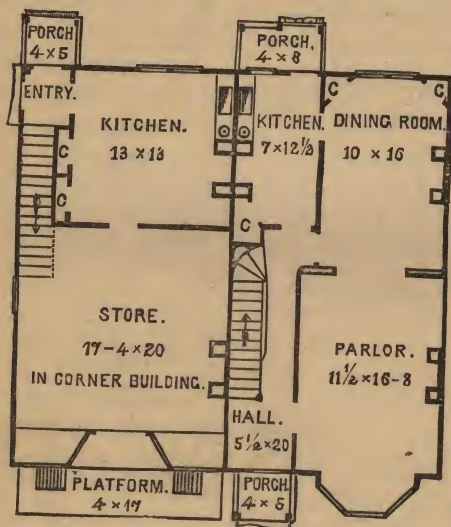


Fig. 173.—PLAN OF FIRST FLOORS.

from the street at the side.... SECOND STORY, (fig. 174.)—Height of ceilings, 9 feet. The divisions in this story are similar in each of the five buildings, and consist of a hall, two large and two small rooms, and the necessary closets. The room over the store is used as a parlor. One of the small rooms in each house is fitted as a bath-room. The Stairs leading to the attics are placed above the main flights, with a door at the foot of each..... ATTIC, (fig. 175.)—The Attic of the corner building is partitioned off, and finished as shown, with ceilings 9 feet high, and has an inclosed stairway leading to the observatory. The latter is 7 feet square in the clear, and is also finished. Each of the four adjoining attics are plastered on their sides, but have no partitions.... CONSTRUCTION.—The Excava-

tions are made in the earth for the corner building, to the depth of $5\frac{1}{2}$ feet—and for the others, 3 feet. The foundations are of 8-inch brick work. The frame is of sawed, seasoned timber. The main division walls between the houses are deafened, by filling with pale brick and mortar, “laid flat.” The sidings are of clear pine clap-boards, laid on rolled sheathing. The Mansard Roofs for front, one end, rear, and the tower, are slated; all other roofs are tinned. The interior walls and ceilings of the two full stories are hard-finished on two coats of brown mortar; the balance is white-finished on one coat of “laid off” brown mortar. The halls, parlors, dining-rooms, and store, have stucco cornices and centers in each, and the openings to the bay windows are arched and moulded. Mar-

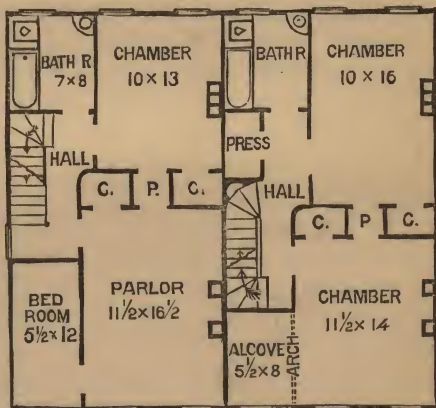


Fig. 174.—PLAN OF SECOND FLOORS.

ble mantles are put in the principal rooms, and marble shelves and stucco trusses are put in the large bed-rooms. Fire-place heaters are put in the parlors, with pipes connecting them with registers in the second story. The bath-tubs and water-closets are cased with black walnut. . . . To give an exact idea of the plumber's work, the specification used as a guide in its introduction is here-with given.—PLUMBING:

There must be a hopper water-closet and a wash-tub with three apartments put in each basement. A No. 2 range, with elevated oven, and water-back; a 30-gallon

oval-topped copper boiler of Croton pressure strength, resting on an iron Lockwood Stand, and an 18×30-inch iron sink in each kitchen; a bath-tub, 5 feet long, lined with planished copper; a wash-stand, with 14-inch bowl, marble-top and wall plates; a pan water-closet, with bowl, pull, and crank attachments; and a tank, $1\frac{1}{2} \times 1\frac{1}{2} \times 3$ feet, lined with sheet lead, in each bath-room. All supply pipes to be of galvanized iron, of the following sizes: The main of $1\frac{1}{2}$ -inch, 93 feet long, laid in the cellar bottom below the foundation walls, near the rear

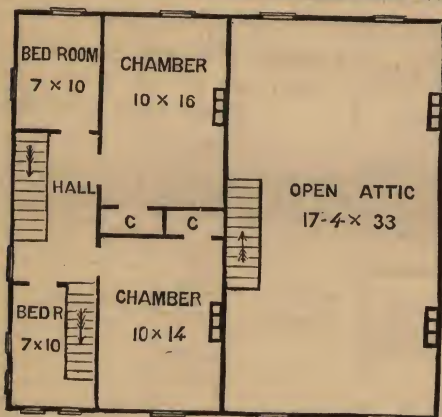


Fig. 175.—PLAN OF ATTICS.

chimneys, one end to extend outside the building for street connections. Branches of $\frac{3}{4}$ -inch leading from the main supply to the tank, with secondary branches leading to the hopper-closet, wash-tubs, and sink. All other

water-pipes to be of lead, as follows: For cold water leading from the tank, to the bath-tub, water-closet, and boiler; and for hot water leading from the boiler, to the sink, wash-tubs, and bath-tubs, of A $\frac{5}{8}$ -inch; for connections between the water-back and boiler of AA $\frac{3}{4}$ -inch; and for wash-stands of A $\frac{1}{2}$ -inch. The water and hopper closets are to have traps of 4-inch, lead, connecting them with the soil pipe. Ventilating pipes of 2-inch tin, to lead from the 4-inch traps to above the roof, and have cone-shaped covers set 2 inches above their openings. The soil pipes to be of 4-inch iron, and lead from the

second floor to the tile drains at the rear and below the cellar bottom. Waste pipes to be of 1½-inch, with traps, all of lead, leading from the bath-tub, wash-bowl, sink, and wash-tubs, to the soil pipe. Brass lever "stop and waste" cocks must be put in the branch supply pipes near the basement floors, and in the pipes leading from the tank to the boiler. A "Fuller's" Tank Regulator to be connected with the supply pipe leading to the tank. A "Sediment" cock must be attached to empty the boilers, with pipes leading to the waste pipes of the sinks. Finished brass ⅝ "compression" cocks, with flanges, and thimbles, must be provided for the sinks and wash-tubs, and similar cocks, silver-plated, for the bath-tubs; plated swing cocks for the wash-stands. Self-acting compression cocks must be put in the connections with the hopper closets. Plugs, with chains, must be put in each wash-tub and bowl, and trap-screws put in all traps. Finally, all to be properly connected, in a substantial and workman-like manner, and warranted one year, with ordinary use.

ESTIMATE for cost of materials and labor:

Mason's materials.....	\$2,200.00
Lumber of all kinds.....	1,950.00
Slate and tin.....	450.00
Rolled sheathing.....	50.00
Cornices, etc., from mill.....	250.00
Porches and stairs, with railings.....	500.00
Hardware and nails.....	400.00
Mantles.....	360.00
Plumbing, gas-pipes, and sewers.....	940.00
Doors, sash, and blinds....	725.00
Cartage.....	100.00
Carpenter's labor, not included above.....	1,300.00
Painting.....	475.00
Total cost, of FIVE Houses.....	\$10,000.00
Average cost, \$2,000 each.	

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